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London, England

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METAL STATISTICS

JULY
1957

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TWO LINE *Editorials*

A California inventor has patented a device for parking a car in a narrow space by the curb. What is most needed, however, is a way to find an unoccupied space by the curb.

* * *

Scientists in California proudly announce that they have discovered the anti-proton, although most of us laymen didn't know that the proton had any enemies.

* * *

President Eisenhower seems surprised that his defense budget is requiring so much defense.

* * *

"Can't we," asks an anxious editor, "find a substitute for war?" Maybe so; but it probably wouldn't be as wasteful, useless and expensive.

* * *

A news item telling of a nudist colony in northern Canada will be surprising to those who may have thought that in that climate bearskins would be more comfortable than bare-skins.

* * *

A Detroit automobile manufacturer is said to be planning a new car called the Patriot to sell for $1,776. They might have a larger market by calling it the Columbus and selling it for $1,492.

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Tin-Bearing Material
Automobile Radiators

Washington Report

July 15, 1957

FALLING LEAD AND ZINC PRICES finally galvanized Congress, during the month in review, into at least scheduling hearings on proposed legislation to help the hard-pressed domestic mining industry. The House Ways and Means Committee decided to hold hearings on August 1 and 2 on proposals to put an import excise tax on lead and zinc. The major proposals before the committee would carry out Administration plans for a variable tax, changing inversely in proportion to changes in domestic prices for both metals As the domestic prices of the metals drop, the import taxes would go up. The Senate Interior Committee has scheduled hearings for July 29 and July 31 on parts of the Administration's long-range minerals program. There were reports here that the House Interior Committee's mining subcommittee will conduct similar hearings shortly afterward.

Members of the House Ways and Means Committee indicated they thought the chances for action on the bill are not too bright, and that the scheduling of the hearings, voted only after considerable discussion and argument in the committee, was mainly designed to permit lead and zinc area lawmakers to let off some steam. The Ways and Means group also scheduled hearings July 29 through 31 on various proposals to tighten up the anti-dumping law. The anti-dumping law is aimed at blocking foreign producers from "dumping" under-priced goods on the U. S. market and injuring domestic industries.

Might Bring Retaliation

In an analysis of the Administration's proposed long range minerals program, the State Department pointed out that while higher U. S. lead and zinc duties would not violate the General Agreement on Tariffs and Trade (GATT) they would invite possible retaliation by foreign countries. Informed quarters said that since the U. S. is believed to have little leeway left in cutting tariffs on other products to compensate for a rise on lead and zinc, this country would have to anticipate imposition of higher duties on U. S. exports to other countries. Among the nations protesting proposed tariff boosts are Canada, Mexico, Peru and Australia, suppliers of metals to the U. S.

Imports of Brass Goods

Further news on the legislative front included introduction of a bill, by Rep. Patterson (Rep., Conn.), to curtail imports of plumbers' brass goods. The measure would restrict imports to five per cent of the domestic consumption during the previous year and provide a formula which Rep. Patterson said would not unduly hurt exporting countries.

Congress has approved a House-Senate compromise decision to appropriate $6,700,000 for fluorspar and asbestos buying during the coming fiscal year, which begins July 1, 1957. Omitted from the bill were funds for the purchase of tungsten and columbium-tantalum by the Interior Department.

Gov't Rejects Nickel Offer

The Government has turned down a proposal from International Nickel Co. to sell part of its expanded nickel output to the U. S. stockpile. General Services Administrator Franklin G. Floete, whose agency manages the nation's strategic stockpile, said, "We've advised them (Inco) that the Government is not interested."

Floete said the decision was based on "half a dozen factors" including the fact that nickel expansion already under way promises to make a total of 440,000,000 pounds available to the U. S. by 1961, up from the current level of about 300,000,000 pounds. The 440,000,000-pound figure is a target set by the Office of Defense Mobilization. Earlier, the ODM ended fast tax amortization for new nickel facilities built by U. S. firms on the theory this goal was on its way to being filled. Inco supplies more than half of the nickel that the U. S. needs.

In June, Inco had sent letters to the GSA and ODM proposing that the U. S. Government stand ready to take part of the estimated 75,000,000 pounds a year which Inco hopes to add to its nickel output from new deposits in Manitoba. Floete said the Government was asked to agree to take up to 150,000,000 pounds of nickel from the new deposits during a two-and-a-half year period beginning in July, 1960, if Inco couldn't sell this quantity privately.

The Business and Defense Services Administration, meanwhile, is giving increasing attention to its program of enforcing priority regulations with respect to nickel certified for national defense purposes, the BDSA announced. Maximum penalty for false statements to agencies of the Government is five years imprisonment, a fine of $10,000, or both, for each offense, and the maximum penalty for conspiracy to violate the Defense Production Act is a fine of $10,000, imprisonment for one year, or both, the BDSA pointed out.

Aluminum Set-Aside

The Business and Defense Services Administration announced that 128,000,000 pounds of aluminum will be set aside from the total supply available in the fourth quarter of 1957 to fill Department of Defense and Atomic Energy Commission orders. This reserve is 17,000,000 pounds less than the amount set aside for similar orders in the 1957 third quarter.

Earlier the Office of Defense Mobilization announced steel, copper, aluminum and nickel alloy allotments for "A" products for the fourth quarter of 1957. Fourth quarter steel allotments are 7 per cent lower, copper 4 per cent lower, aluminum 12 per cent lower and nickel alloy 16 per cent lower than in the third quarter of 1957.

The fourth quarter aluminum allotment is 111,667,000 pounds; copper and copper base alloys, 44,849,000 pounds; nickel alloys, 7,961,000 pounds, and steel, 546,620 tons.

Approve U. S.-Red Barter

The House approved without debate the Administration's request for authority to barter U. S. farm surpluses to Iron Curtain countries for strategic materials. The House passed a compromise bill authorizing $1,300,000,000 to revive and extend for another year the farm surplus disposal program, which lapsed June 30. The bill, which has been sent to the Senate, would permit such barter arrangements with all Communist countries except the Soviet Union,

(Continued on Page 13)

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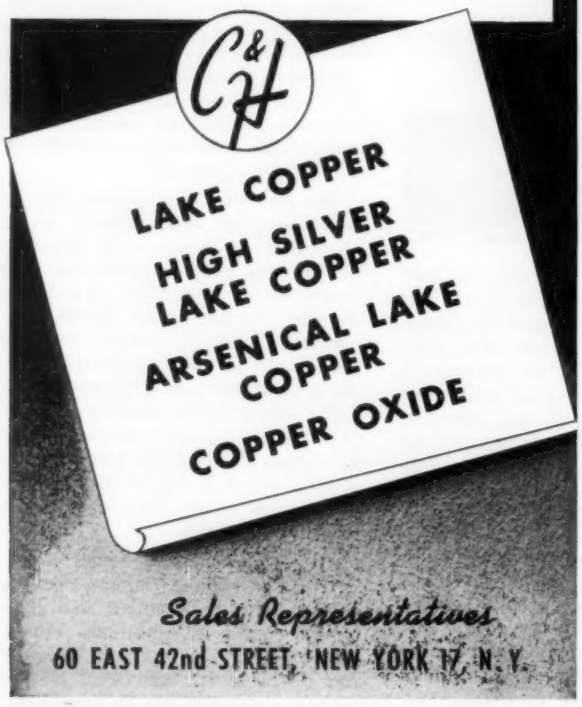

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GROWING DEMAND FOR CONSUMER GOODS IN EUROPE SEEN EXPANDING MARKET FOR ZINC DIE CASTINGS

U. S. Producers Seek to Strengthen Industry Position Via Research for Improved, More Economical Finishing Methods; Study Colored Coatings

By J. L. KIMBERLEY, Executive Vice President, American Zinc Institute, Inc.

AS WE review the events of the last 15 years and consider the metal shortages, real, precautionary, and imagined, which were a part of our problem during World War II and the Korean situation, it would seem that we are unlikely to face a similar situation in the future (short of another war). While I have no world-wide statistics immediately available, there is much evidence that the proven reserves of zinc ore throughout the world are as great or greater than they have ever been before in history. Refining capacity has kept pace. The problems of world supply and price are not within my province (the functions of the American Zinc Institute are limited in scope to technical and promotional activities) but it would appear that you in Europe and we in America can anticipate, better than ever before, completely adequate supplies of the grades of zinc needed at proper prices.

Ernest V. Gent, my predecessor as executive vice president of the American Zinc Institute, had the pleasure about a year ago of meeting with many of you during a three month trip which he made to your great countries. He reported that one of the major obstacles in the larger development of the use of zinc die castings in Europe was the relatively smaller size of your individual markets as compared to those of the United States. He has cautioned that I should not cite American statistics and performance in zinc die casting as evidence of what is immediately possible throughout the various individual countires of Europe. He made it very clear that the American performance of more than 400 thousand tons of zinc for die casting during 1955 is not to be equaled in Europe promptly. It must agree for the present, but nevertheless the true potential demand on a per capita basis favors free Europe.

J. L. KIMBERLEY

With practical limitations in mind, I have spent quite some time attempting to develop a formula or philosophy demonstrating that the minimum production requirement to justify die casting can be lowered. As you might expect, I have not been successful. Apparently, the same fundamental limitations which exist with you also exist in the United States. One simply cannot afford to make the dies required for the casting of 100 or 1,000 parts. Volume is necessary.

I hope and expect that time, and the curent increasing demand for hard consumer goods which is so apparent in the trends of the overall European economy, will result automatically in an expanded need for industrial components best manufactured by die casting. It seems equally certain that this growth can be accelerated by vigorous promotion of your product by the individual companies and by your organization as a group. You, as die casters, believe that the products you offer are best for the purpose intended. Proper publicity for this opinion and the facts behind it will be to your great benefit.

Encouraging trends and possibilities are evident, probably the most important of which is the current plan for completely free trade through the establishment of a common market among 6 Continental countries and the cooperation of the United Kingdom and others for a free trade area. Such a development, if accomplished, will make many industrial activities practical which could not have been considered previously. Most directly, the aggressive and efficient die caster with the best price will have a good chance to develop demands large enough to be best handled by his process. On occasion, arrangements may be made for the expensive dies to be rented or loaned. The production of specific items may become specialized. Other possibilities for extending production by die casting will suggest themselves. It is realized that such a development will be one with mixed blessings—difficult problems will be encountered—some important factors will never be resolved. Product standardization will probably be required to a degree never before reached. A consideration of Continental and British specifications for die castings and ingot indicate that the problems of metal standardization and consistently high quality are well in hand. The importance of this particular aspect (proper metal) cannot be overemphasized. If we are correct in the basic belief that the production of a great many parts, now manufactured by other methods, would be best accomplished by die casting, I am sure that a majority of the problems can and will be overcome, and that the progress of your industry will be even more outstanding than it has been to date.

I should like to bring to your attention a project which the American Zinc Institute now has under way on behalf of the zinc section of the Amer-

Excerpts of address at Second International Die Casting Conference, Paris, France, May 20-24, 1957.

ican die casting industry. This project is considered to be a splendid example of cooperative effort by natural competitors in a technical venture on an industry wide basis.

During 1955, it became apparent in the United States that serious threats to zinc die casting existed. These included shortages of nickel, threatened shortages of special high-grade zinc, a vigorous promotion on the part of those interested in aluminum with anodized finishes in color which are now available on aluminum sheet products, the threat of the extension of anodized and colored aluminum into die cast products, and the fact that finishing costs on zinc die castings were disproportionately high. It is now clear that the feared shortage of special high-grade zinc never materialized and never caused any work stoppage. Also that increased production of "special high" makes unlikely any repetition of that threat. The nickel situation may be expected to improve significantly since discoveries of new ore bodies have been made and there are plans for substantially increased production of the metal.

Research Program

Nevertheless, the zinc producers of the United States, through the American Zinc Institute, have undertaken a research program in order to strengthen the industry position. Battelle Memorial Institute of Columbus, Ohio, has been commissioned to explore ways and means for: (1) improving existing methods for finishing zinc die castings and making them more economical, and (2) to investigate the possibility of colored finishes on zinc die castings which will be both protective and durable. The remainder of my talk with you will consist of a recital of progress made to date on this work.

One of the first Battelle investigations was aimed at eliminating buffing — electropolishing and bright zinc plating being substituted. It is felt that this approach may result in economies, particularly for those finishing and plating plants that must buff their die castings by hand before plating. The importance of a very smooth and bright surface prior to copper, nickel and chromium plating has not been overlooked.

The electropolishing, which should cost no more than conventional electrolytic cleaning, serves to smooth surface irregularities, especially at edges and areas where flash has been trimmed. In addition, electropolishing serves a most important function by rounding off the edges of surface pores, thereby paving the way for success in filling the pores during the zinc plating operation which follows. It is established that electropolishing alone is not a satisfactory substitute for buffing but when it is combined with an electroplating operation which seals surface porosity and levels surface roughness, smooth mirrorlike surfaces can be produced.

Electroplating Processes

Several brightening and leveling electroplating procedures and processes have been investigated with a new procedure for zinc plating currently having the best chance of meeting both the technical and economical requirements. Surface irregularities resulting from superficial die surface roughness and handling scratches are largely eliminated. The ability of the zinc plate to fill surface pores seems outstanding. This filling of pores, together with the high purity of the zinc plate, may result in improved corrosion resistance for die castings which are subsequently plated with copper, nickel and chromium by conventional methods.

To date, it would appear that the time needed for electropolishing and zinc plating is about 30 minutes which is about the same time as is now required in many plants for buffing and cleaning. However, with suitable equipment, the handling operations before and after buffing may be entirely eliminated for some die castings. Once the parts are racked for electropolishing, they can be processed with automatic plating equipment through all the plating stages. In cases where the flash is trimmed completely, and where surface imperfections such as cold-shuts are not excessive, the parts can be conveyed directly from the die casting room to the plating room with no intermediate stages for polishing or buffing. Other parts with flash that cannot be trimmed completely will still need to be strapped (ground) or polished at flash areas before they are racked for electropolishing and plating.

There may be certain parts with thin sections or large flat surfaces on which a zinc leveling coat would not be adequate to eliminate buffing. In this case, investigations are being carried out to establish whether the original castings might not be cleaned and plated with zinc "as cast" in advance of somewhat simplified polishing and buffing. It is anticipated that the zinc plate would flow better under pressure than the die cast zinc alloy. It is considered likely that this device can eliminate some scrap and also reduce the cost of polishing and buffing for the reason indicated.

A coroliary advantage of this development may be found in the use of the zinc plating solutions which are so promising, and which involve acid rather than cyanide baths. A costly and sometimes difficult waste disposal operation may be eliminated. The rinse water from the alkaline electropolishing solution can be at least partly neutralized by the rinse water from the acid zinc plating solution. No unusual chemical or operating condition is required for either electropolishing or zinc plating. The success of the Battelle work may properly be attributed to new combinations of chemical formulations and operating conditions.

The zinc plating operation employs periodic current reversal for improving the leveling power and the brightness of the plate. An addition agent also is required. Although full bright plate is produced with one set of conditions, leveling power is better with another set which results in a semi-bright appearance. If necessary, this semi-bright surface can be electropolished for 15 or 30 seconds and made mirrorlike.

Photographic Studies

The visual observations of the Battelle staff and the reviewing committee of the American Zinc Institute have been supplemented by photographic and metallographic studies of the surfaces of the electropolished and electroplated die castings. Interferometry with monochromatic light shows that electropolished die cast surfaces plated with zinc, copper, nickel, and chromium are equally as smooth as commercially buffed die cast surfaces plated with copper, nickel, and chromium. Metallographic examinations of representative cross sections show that the zinc plate fills surface pores almost completely—this in contrast to copper plate which appears to have little or no appreciable pore-filling action.

Thus far the Battelle work has been carried on as a small scale operation in the laboratory. The time is near when the findings will be tested, and we hope proven, on a pilot plant scale. Cooperation from commercial plating shops has been assured.

The characteristics of the newly developed zinc plate are such that another application suggests itself and will be investigated — namely, the plating of steel parts with zinc. The electronic and automotive industries specify bright zinc plate for certain components which are subsequently given a bleached chromate finish for passivating the zinc surfaces. Such steel stampings often have rough sur-

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NEW MATERIALS, INCLUDING ALUMINUM, STEEL AND PLASTIC, CHALLENGING LEAD AS CABLE SHEATHING

Indicated Power Utility System's Growth, However, in Next Decade Should See Continued Use of Lead in Same Ratio as It Has Been for Past 5 Years

By CHARLES C. SHACKFORD, John A. Roebling's Sons Corporation

LEAD has been used as a sheathing material for electrical cables for over 65 years. My company first started to employ lead for telephone cables in 1891. We know in specific cases where lead has provided a water-tight barrier on paper insulated power cables which have been in operation for over 50 years. This speaks well of lead as a reliable cable construction material.

From the viewpoint of the cable manufacturer, the primary purpose of of a lead sheath is to protect the underlying electrical insulation from the environmental conditions under which the cable must operate in service. Specifically, for high voltage oil impregnated paper power cables and paper insulated telephone cables, the lead sheath provides a hermetic barrier to prevent the ingress of moisture or water, the arch enemy of these classes of insulation. Of course, if the cable industry can find another metal or some other material which can accomplish this same task more economically or which has more desirable physical properties, we can expect to see lead assume a secondary role in our electrical wire and cable industry. I am sure that the lead producers are well awere of the activity within the cable industry towards the possible use of aluminum as a replacement for lead.

Cable Lead Use Reduced

The unique properties of lead are such that lead lends itself quite readily to the design, manufacture and insulation of electrical cables. However, during the past decade, the electrical cable industry has been required to develop new designs in cable constructions. All of these developments have resulted in a reduction in the amount of lead which otherwise would have been used by the cable industry.

The shortage of lead which plagued our industry about 10 years ago started cable engineers to look towards greener pastures. We were forced to think of ways and means to stretch our lead as far as we could in order to get cable to our customers and to keep our shop busy. When the lead shortage cleared, our eyes had seen several interesting developments.

Substitutes Developed

The use of neoprene as a direct substitute for lead was given tremendous impetus for rubber insulated cables. Today, only an exceedingly small percentage of our rubber insulated cables employ lead as a protective covering.

For telephone cables as manufactured by the Western Electric Co. for the various Bell Telephone Companies throughout the United States, the Bell Telephone Laboratories have developed the "Alpeth" and "Stalpeth" cables which use materials other than lead. This was reported by Mr. Stover at the 24th Annual Meeting of this Association. During these times when lead was in short supply, my company which also manufactures telephone cables but to a much smaller scale, reduced their lead sheath thicknesses as a temporary measure. We still employ lead sheathing for all of our standard paper insulated telephone cables, but even here today we are looking for something more economical.

Use of Plastic

Also, during these periods of short lead supply, we started development on telephone cable designs which would not require a moisture proof barrier such as lead. The answer lay in the use of a plastic to replace the paper insulation on the conductors, and with an overall plastic jacket to replace the lead. The plastic in this particular instance is polyethylene which can be obtained economically and today is in good supply.

For power cables we find a definite trend to a 15 per cent reduction in lead sheath thicknesses by the use of a reinforced neoprene jacket applied directly over the lead. In a few instances, we see some installations being tried with a 33 per cent reduction in lead sheath thickness. I believe I am correct in saying that one large New England utility now purchases all of their lead covered power cables with the lead being reduced by 33 per cent.

The threat of aluminum as a replacement for lead is a very real one. The only question is how soon will aluminum, or perhaps some other metal, make inroads into the lead market. There still remains several major technical problems to be solved not only in manufacture but in installation. These were covered by K. S. Wyatt's report to this Association at the 25th Annual Meeting. The large cable manufacturers are continuing to spend considerable effort on the development of aluminum as a sheathing material. Good progress has been made in this country and also by our neighbors in Canada.

Several large installations have been made with aluminum and various methods are being tried to develop satisfactory procedures for making joints. Considerable progress in the manufacture of aluminum sheath has been accomplished by Germany and Great Britain which has given encouragement to American manufacturers. One American cable manufacturer has recently installed a German extrusion press for aluminum reported to have cost over $1,000,000.

Steel Sheath

Our company is currently evaluating a German development in the use of steel as a replacement for lead for cable sheathing purposes. In this process mild steel strip from .012" to .016" thick is folded around a copper tube through which the cable core passes. The steel strip is overlapped and then the overlapped section passes beneath a welding head and the two layers comprising the overlap are welded together, one electrode being the welding head and the other the copper tube. A cable with a core of somewhat smaller O.D. than the I.D. of the steel sheath is thus produced. The sheathed cable then passes through a corrugating machine which forms grooves or corrugations in the sheath whereby intimate contact between the sheath and the cable core is maintained. The grooves are helically formed.

From what we have seen of this

(Continued on Page 10)

Address by Mr. Shackford, who is chief engineer at Roebling's Electrical Wire Division, at 29th annual meeting of Lead Industries Association, Chicago, Ill., April 24, 1957.

New Materials Challenge Lead as Cable Sheathing

(Continued from Page 9)

steel sheath, we must admit that it is quite flexible and what is more important is its ability to be bent on a relatively smaller radius and its high degree of bending fatigue under cyclic loading conditions. Over 3,000 miles of corrugated steel sheathed cables have been manufactured in Europe. The bulk of this quantity was devoted to paper insulated telephone cables; however, an appreciable amount of low and medium voltage paper insulated power cables have also been manufactured. It is reported that at present paper insulated power cables with steel sheaths up to 10 KV are in commercial production and work on higher voltage cables is in progress.

It has been reported that practical experience in Germany has shown that the joining of steel sheaths can be accomplished with the same degree of reliability within the same amount of time and with the same personnel as that of the lead sheath cable.

All of the above, I am sure is not pleasant to the ears of the lead producers. The question may be asked as to why the cable manufacturers are looking for a material to replace lead. The first is a matter of economics. For example, in a 606 pair telephone cable, the lead sheath represents 34 per cent of our total raw material cost. I believe you will agree this is an incentive to look for more economical sheathing design and/or materials. This pound volume cost is very much in favor of aluminum. This advantage is offset by the need of a corrosive protective covering when required for aluminum. However, there is an increasing use for protective coverings over lead sheath so this feature can be discounted to a certain degree.

New Alloys of Lead

Present day power cable designs require materials which possess good tensile strength, low creep, and high resistance to bending fatigue. Lead is exceptionally poor in all three respects. Within the past 10 years, several of the large cable companies on an individual basis have spent considerable sums of money in an effort towards producing alloys of lead which would bring about an overall improvement in lead for sheathing power cables. To the best of my knowledge we have seen no recent contributions or efforts undertaken by the lead producers themselves, during the past 10 years.

These new fatigue resistant lead alloys, commonly referred to in the wire and cable industry as "arsenical alloys" are classed as quaternary alloys containing small percentages of arsenic, tin and bismuth. More recently my company has devoted its attention to a tellurium bearing arsenical alloy developed by the General Electric Company. This particular tellurium lead alloy which we are now using on our cables is composed of .07-.10 tellurium, .18-.20 per cent arsenic, and .13-.14 tin in a common desilverized lead base. In the range of strains commonly encountered under service conditions, the tellurium lead alloy has a fatigue life between 5 to 6 times that of copper bearing lead. There is also a corresponding improvement in the creep rate of the tellurim lead alloy. For example, the creep rate at 200 p.s.i. and 150°F is 1/10 that of copper bearing lead. The tellurium lead alloy handles very easily on a conventional intermittent type press. The major advantage of this alloy is that the heat-treating temperature is not critical over a wide range of temperatures which means that greater tolerance can be allowed in manufacture to produce uniform properties. Unfortunately, none of the arsenical alloys including the tellurium bearing arsenical alloy can be extruded on the new type continuous lead extruders, at least at this stage of development on the continuous extruder.

Lead Position Challenged

As to the future of lead in the wire and cable industry, we must remember that there are still technical problems to be resolved in the newer types of metallic sheaths. Also, the utilities are very thorough in their evaluation of any new product or design, and it would not seem that they will suddenly abandon lead in preference for some other metallic covering for their cable requirements. As mentioned previously, several trial installations of aluminum sheathed power cables are now being studied. The power utilities have indicated a continual wide growth for the next ten years. We continue to see generating stations being constructed throughout the country. This, in turn, should be reflected in the need for underground power cables of all types. Certainly, at this date, lead will continue to be used in the same ratio as it has for the past 5 years. However, when the technical problems for aluminum have been resolved and economic conditions become important, the lead industry will begin to lose a major portion of its cable business. For telephone cables, in our company we have seen the plastic insulated and jacketed cables make inroads into the lead covered types. We expect this trend will continue not only in our own company, but also among the other telephone cable manufacturers.

Lead as a cable sheathing material has been king for 60 years or more. Today its position is being severely challenged by several up and coming new materials which bear watching very closely.

Zinc Die Casting Market Seen Expanding in Europe

(Continued from Page 8)

faces which are not satisfactory in appearance after conventional bright zinc plating. The improved zinc plating process may prove of substantial usefulness for the coating of steel parts either as indicated or as a base for copper, nickel and chromium.

One of the original objectives of the program was to explore the possibilities inherent in anodized surfaces. Not much work has been done at Battelle on this aspect as yet, since the work of the British Non-Ferrous Metals Research Association and others on the continent along these lines has been known to be under way.

I trust it has been clear, as I have spoken concerning the sponsored work at Battelle, that the generalized statements made constituted a progress or status report on findings of about two months ago.

Additional Evidence

Additional evidence has since appeared of which you should be informed. A key to the potential success of zinc leveling coats deposited with periodic current reversal from acid plating solutions has proven to be the "addition agent." Work since first writing indicates that the nature of this "addition agent" and its control are critical and as yet are not commercial. More work remains to be done.

I recommend the display of American die castings to you for its potential technical usefulness. I recommend the manner of presentation to you as an example of an extremely useful tool in the promotion of your process and its product to your customers and consumers.

In closing, I should like to repeat that it has been most enjoyable to have talked with you and to state again that the American Zinc Institute will be happy indeed if it can be of service to you either collectively or individually. The tremendous growth of the die casting industry during the last 30 years is a perfect demonstration of the value of your process and its product. With a continuation of the effort you are making, further growth seems assured.

UNITED KINGDOM OBSERVERS EXPECT NO EARLY RISE IN DEMAND FOR COPPER DESPITE REASONABLE PRICE

Import Restrictions in France, India and Japan to Restrict Consumption; Russian Supplies Affect Tin Market; Lead and Zinc Quotations Dip Again

July 2, 1957

THE copper market during the past month has not had a very cheerful appearance. The attempt of the Rhodesian producers to hold the London price in the region of £240 a ton having proved abortive, quotations continued to sag in the absence of any recrudescence of consumer buying on an appreciable scale.

The announcement of further output cuts in the U. S. A. including the big reduction in Phelps Dodge output for the month of July, failed to stiffen sentiment here, and although it looked at one time as if prices might level out in the region of £220 a ton — at which level there was a certain amount of "bear" covering — this proved to be merely temporary and quotaions fell to the lowest level recorded since the London market reopened.

The sharp drop in the U. S. domestic producers' price to below 30 cents a pound was surprising only in that observers here had expected the move to be to 30 cents. With London prices down to the equivalent of slightly less than 27 cents a pound, even the new figure at one time looked rather high.

During the month, the Rhodesian Selection Trust price has been chasing the Metal Exchange quotation downwards, having been reduced from £240 to £230 on June 14 and a further £10 to £220 on July 1. It is difficult to know just what impression this is likely to have made on the minds of the U. K. consumers concerned, coming as it did immediately prior to a meeting of the main U. K. users on July 3 to consider the pricing proposals put forward jointly a few weeks ago by the two big Rhodesian producing groups.

Rhodesian Price Proposals

These proposals have proved a well-kept secret for full details have still not been released, so that it is difficult to discuss them intelligently. It is not generally anticipated that any quick decisions will be made on this matter by the consumers as there are many pros and cons.

The situation was, perhaps, quite reasonably summed up the other day by Mr. M. A. T. Johnson, chairman of Richard Johnson and Nephew, Ltd. at the annual meeting of the company. He said, "Unfortunately the conundrum introduced by the two-price system is still with us . . . It is important that the difficulties brought about in the consuming industry by the second price should be fully understood and the following facts may be of interest:

"During the 254 market days of the year under review, the London Metal Exchange price was higher than the RST price on 103 days and lower than the RST price on 141 days. The two prices were equal on ten days. The highest gap was when the LME price was £45 below that of the RST and it is interesting to report that the average LME price for the year amounted to £290 8s 11d compared with the RST average of £291 13s 7d.

RST Price Changes

"The RST fixed price was altered on no less than eleven occasions during the year, and on one occasion the duration between changes amounted to only seven days. It would therefore seem quite impossible in the copper industry to provide a really stable price as we understand the position in the case of steel and aluminum, and we must accept the fact that the circumstances are different. Of the two bases we undoubtedly prefer the day-to-day variation of the LME, since owing to its unpredictability, it is less likely to promote speculation and hold-ups than a price which is always following it up or down.

"What seems to be unquestionably desirable is a common price at which all can buy, and we are always ready to examine any method which the producers care to put forward calculated to have this effect and to prevent undue speculation."

During the past months, stocks in Metal Exchange official warehouses have increased further from 8,222 tons to 10,272 tons but as was pointed out a month ago, a substantial proportion of these stocks appears to be held by, or on behalf of, the Rhodesian pro-

By L. H. TARRING
London, England

RST PRICE CHANGES

Changes in the Rhodesian Selection Trust's fixed electrolytic copper price, since it was established on May 9, 1955, and applicable to the RST's regular customers in the U. K. follow :

Date of Change	Pounds Sterling (Long Ton)	Equivalent in Cents Per Pound
1955		
May 9	280	35.00
August 2	325	40.625
September 5	360	45.00
1956		
February 27	385	48.125
April 30	350	43.75
May 28	320	40.00
June 18	300	37.50
July 2	275	34.375
August 1	300	37.50
October 15	280	35.00
October 24	265	33.125
November 12	280	35.00
December 17	270	33.75
1957		
February 1	250	31.25
February 19	240	30.00
June 14	230	28.75
July 1	220	27.50

U. K. COPPER STATISTICS

The British Bureau of Non-Ferrous Metal Statistics reports that at the end of April, U. K. stocks of blister copper were 16,910 tons against 11,235 tons at the end of March; those of refined copper were 54,191 tons (50,544 tons). Stocks of refined copper held by consumers were 34,437 tons (31,616 tons). U. K. output in April was 14,522 tons of which 7,012 tons were primary refined and 7,510 tons secondary refined. Consumption in April was again lower at 40,940 tons against 54,243 tons in March and 56,040 tons in February, but was still only marginally less in the first four months of the year than in the corresponding period last year. Full details are given below.

Product	— Gross Output — April 1957	4 months ending Apr. 30, 1956	Apr. 30, 1957
Unalloyed Copper Products			
Wire (1)	22,293	80,832	96,013
Rods, Bars & Sections	1,407	6,786	5,997
Sheet, Strip & Plate	4,557	20,326	19,918
Tubes	4,837	17,628	18,958
Castings & misc.	650	2,600	2,600
Alloyed Copper Products			
Wire	1,402	6,573	5,894
Rods, Bars & Sections	8,818	47,374	39,247
Sheet, Strip & Plate	6,725	43,481	30,806
Tubes	1,898	7,768	7,677
Castings & Misc.	6,031	26,420	26,067
Copper Sulphate	4,215	17,867	17,325
Total all products	62,833	277,655	270,502
Copper Content of Output	51,868	222,191	222,928
Consumption of Refined Copper (2)	40,940	166,941	178,171
Consumption of Copper & Alloy Scrap (3) (Copper Content)	10,928	55,250	44,757

Notes:
(1) Consumption of H. C. Copper and Cadmium Copper Wire Rods for Wire and Production of Wire Rods for Export.
(2) Virgin and Secondary Refined Copper.
(3) Consumption of copper in scrap is obtained by the difference between copper content of output and consumption of refined copper, and should be considered over a period since monthly figures of scrap consumption are affected by variations in the amount of work in progress.

AVERAGE BRITISH PRICES FOR COPPER, TIN, LEAD, ZINC

(Per Long Ton)

Mean of Bid and Asked Cash Quotation at Close of Morning Session on London Metal Exchange

	COPPER						TIN						LEAD				ZINC			
	Cash			3 Months			Settlement			Cash			3 Months			Settlement			Current Month			3rd Following			Current Month			3rd Following		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
1954 Averages	248	17	11	239	17	7	249	0	11	719	8	11	709	17	7	720	6	7	98	8	12	94	7	4	78	5	4	77	16	11
1955 Averages	351	14	11	341	0	3	352	5	6	740	2	12	736	12	11	740	12	8	105	17	3	105	9	6	90	13	4	89	12	3
1956 Averages	328	14	5	324	13	1	329	1	8	787	14	9	774	7	7	788	13	3	116	6	5	114	8	9	97	14	3	95	3	7
1957																														
January	265	17	11	264	14	4	266	3	2	789	3	2	771	10	5	789	16	4	116	5	1	114	10	8	103	5	1	98	13	8
February	245	11	2	244	2	0	245	16	3	770	16	9	752	9	6	771	8	6	113	3	0	112	6	11	99	8	11	96	17	0
March	239	10	11	239	2	9	239	14	6	770	14	6	756	8	7	771	7	2	113	2	1	112	6	11	96	12	3	94	15	9
April	241	19	2	242	15	9	242	2	0	774	4	9	768	7	6	774	17	6	111	17	5	111	14	1	98	7	6	94	13	5
May	237	17	5	238	1	2	238	0	3	765	8	1	763	8	6	765	15	3	99	9	3	99	16	3	85	15	7	82	8	3
June	227	2	8	228	16	2	227	5	9	762	10	0	759	14	9	762	16	10	91	13	9	91	19	9	74	6	1	73	16	4

ducers as a result of their recent market support activities. For the time being, this limits the amount of metal on warrant available to the market but at the same time leaves it rather vulnerable, as any attempt to liquidate these stocks would undoubtedly depress prices rapidly in present circumstances.

Few people would deny that copper is now quite reasonably priced, but with the quiet holiday season at hand, it is difficult to see much prospect of an early improvement in demand, especially in view of the setback occasioned by import restrictions recently imposed in France, India and Japan, as a result of foreign exchange problems in those countries. Early in July the outlook was changed for the better by news that Chile is likely to change her earlier policy and inaugurate a 10 per cent cut in production. This caused a sharp rally in prices here.

Canadian Tin Disposal

Although the tin market remained remarkably steady during June, it received something of a shock when it was announced after the meeting of the International Tin Council in Brussels on June 6 that Canada had given six months notice of her intention to dispose of 3,000 tons of tin from her strategic stocks. However, it was also intimated that the disposal of 2,500 tons from the British stockpile was unlikely to begin before September, although the six months notice required under the agreement has now expired.

As the International Tin Council is expecting a surplus supply this year of about 5,000 to 6,000 tons and as American consumers have continued to show surprisingly little interest in Straits tin, the tendency of prices would almost certainly have been downward but for the market operations of the Buffer Stock manager, which have been very efficiently arranged so as to peg prices for the time being.

LME Warehouse Stocks

Stocks of tin in London Metal Exchange official warehouses have now trebled in a period of two months, but presumably owing to the Buffer Stock holding metal off the market, a backwardation persists in LME prices.

With much larger imports of tin concentrates this year, mainly from Bolivia, U. K. smelter output is running at the highest level for many years and presumably will continue at the higher rate. Russian tin continues to be a definite factor in the European market and although there is no certain knowledge of the quantities likely to be exported by the Soviet in the future, it looks as if Soviet supplies will have to be taken into consideration in any survey of the statistical position.

Lead Price Trend

As was only to be expected, the rate of decline in lead prices slowed down considerably during June but even so quotations at one time were several pounds lower on the month, and dipped slightly below the £90 level.

This makes London prices look rather cheap in comparison with the U. S. figure of 14 cents and especially since the last drop in the American domestic zinc price, a cut in the lead quotation there would occasion little surprise on this side. At one time, hopes were aroused that the new barter program might be made less restrictive, but these seem to have been effectively dashed by the recent statement on the subject by the Secretary for Agriculture.

In these circumstances, the intimation that for the current month at any rate, U. S. purchases for domestic lead for the stockpile might be on a larger scale, had very little effect on sentiment here. With the price outlook so uncertain and the quietest season of the year at hand, it is hardly surprising that consumers generally are buying extremely cautiously, but the strike of Belgian metal workers on July 1 has resulted in some recovery in prices.

The supply situation in the U. K. is fairly easy, as imports of pig lead in the first five months of the year were some 4,000 tons higher than in the corresponding period of 1956, whereas in the first four months of the year, consumption of imported virgin lead was 7,000 tons down (although

(Continued on Page 13)

U. K. TIN STATISTICS

The British Bureau of Non-Ferrous Metal Statistics reports that at the end of April, U. K. stocks of tin were 3,281 compared with 3,450 in March and 3,169 in February. Consumers held 1,654 tons against 1,591 tons at the end of March. U. K. production in April was 2,074 tons primary and 25 tons secondary, compared with 2,835 tons and 33 tons respectively. Consumption of primary tin again dropped slightly to 1,752 tons against 1,878 tons in March. Full details are given below:

Trade	April 1957	4 mos. ending April 30, 1956	4 mos. ending April 30, 1957
Tinplate	934	3,276	4,041
Tinning:			
Copper Wire	41	173	175
Steel Wire	9	37	33
Other	65	286	245
Total	115	496	453
Solder	159	952	701
Alloys:			
Whitemetal	196	995	894
Bronze & Gunmetal	194	914	845
Other	25	142	123
Total	415	2,051	1,862
Wrought Tin (1)			
Foil & Sheets	22	107	105
Collapsible Tubes	18	115	105
Pipes, Wire & Capsules	5	16	25
Total	45	238	235
Chemicals (2)	75	332	370
Other Uses (3)	9	41	38
Total all trades	1,752	7,386	7,700

Notes: (1) Includes Compo & "B" Metal. (2) Mainly Tin Oxide. (3) Mainly Powder.

U. K. LEAD STATISTICS

The British Bureau of Non-Ferrous Metal Statistics reports that stocks of imported virgin lead at the end of April were 34,970 tons (24,195 tons at the end of March) and 9,963 tons English refined (10,682 tons) of which consumers held 18,246 tons (15,180 tons) and 6,732 tons (6,577 tons) respectively. Details of consumption are given below:

	April 1957	4 mos. ending April 30, 1956	4 mos. ending April 30, 1957
Cables	9,389	36,503	38,444
Batteries — As metal	2,314	10,035	9,566
Battery Oxides	1,688	9,711	8,123
Tetraethyl Lead	1,728	7,557	7,058
Other Oxides & Compounds	1,293	8,595	7,526
White Lead	702	3,763	2,985
Shot	287	1,631	1,483
Sheet & Pipe	5,631	23,957	22,731
Foil & Collapsible Tubes	375	1,745	1,591
Other Rolled & Extruded	509	2,591	2,213
Solder	928	4,335	4,127
Alloys	1,384	4,833	5,609
Miscellaneous	1,018	4,166	4,017
Total Consumption	27,246	119,422	115,563
Of which:			
Imported Virgin Lead	12,502	60,782	53,646
English Refined	6,304	27,190	27,362
Scrap including Remelted	8,440	31,450	34,555

British Metal Markets

(Continued from Page 12)

total consumption had declined by barely 4,000 tons). In addition, of course, there have been supplies released from the Government's strategic stockpile.

Zinc Moves Downward

The zinc market here continued its downward trend during June, nearby metal at one time falling to only £71 a ton. This was followed by a reduction in the U. S. domestic price to the expected level of 10 cents a pound, at which figure it is believed that domestic producers are likely to offer resistance to any further falls, and this view was confirmed by the cuts in output announced by Asarco.

This, in turn, was followed by news of strikes at some American mines and smelters and, as far as the London market is concerned, the more immediately important fact of a major strike of metal workers in Belgium on July 1, which, if prolonged, may seriously affect zinc output there and limit supplies from that source to the London market.

As a result, Metal Exchange prices have recovered some £5 10s 0d a ton from the lowest point reached. The further outlook at the moment is still obscure, however.

Recently there was a scare here that the British Government might start releasing metal from its strategic stockpile in accordance with the policy announced some months ago. It is still not certain what official plans are in this connection, but it is believed that strong representations have been made to the authorities by various sections of the zinc industry regarding the inadvisability of such a step in present circumstances.

The quiet holiday season is at hand, and any major revival in consumer demand is hardly to be expected for the time being. It now remains to be seen whether the reduction in output indicated above will suffice to bring global supplies sufficiently closely into alignment with consumption to enable confidence in the outlook for the metal to be restored.

U. K. ZINC STATISTICS

Stocks of zinc in the U. K. were slightly less in April, according to the British Bureau of Non-Ferrous Metal Statistics, the total being 37,540 at the end of the month, against 41,260 tons at the end of March, and 38,971 tons at the end of February. Consumers held 18,628 tons (18,415 tons). U. K. smelters' output was 6,118 tons, a drop of 1,558 tons on the previous month. Consumption was lower at 24,247 tons against 27,049 tons in March.

Trade	April 1957	4 mos. ending April 30, 1956	4 mos. ending April 30, 1957
Brass	7,202	39,381	32,030
Galvanizing	8,632	36,162	37,175
of which: General	2,714	11,706	11,547
Sheet	3,344	10,577	13,536
Wire	1,551	7,437	7,110
Tube	1,023	6,442	4,982
Rolled Zinc	1,547	7,781	7,848
Zinc Oxide	1,870	9,855	8,800
Zinc Diecasting & Forming Alloy	3,168	13,980*	12,958
Zinc Dust	843	3,170	4,033
Miscellaneous	985	3,951	3,988
Total All Trades	24,247	114,280*	106,832
of which:			
Slab Zinc			
High Purity (99.99%)	3,427	15,371*	14,426
Electro & High Grade (99.95%)	4,169	22,846	19,068
Prime Western g.o.b. & Debased	10,103	43,234	43,868
Remelted Zinc	417	1,191	2,196
Brass & other Copper Alloy Scrap (Zinc content)	3,524	18,359	14,920
Scrap Zinc Metal, Alloy Residues, etc. (Zinc content)	2,607	12,511*	12,354

* Revised.

Washington Report

(Continued from Page 5)

Communist China and countries controlled by Communist China.

Meanwhile, the U. S. Department of Agriculture announced that lead, zinc and chromite figured in barter contracts signed during May. The strategic materials, valued at a total of $6,500,000, were obtained in exchange for surplus U. S. farm products. The May contracts compared with $28,900,000 in the previous month. May contracts covered $4,300,000 of chromite, $1,200,000 of zinc and $1,000,000 of lead.

U. S. Chromite Resources

Chromite deposits in the U. S. are much larger than had previously been estimated but the difference is mostly very low-grade material which cannot be mined profitably at current prices, the Interior Department reported.

Based on a reappraisal by the agency's Geological Survey, the new estimate is 3,500,000 long tons of chromium oxide in the ground, compared with 2,000,000 estimated in 1945. The department said that at the 1951-1956 rates of consumption, indicated reserves would last two to three years and inferred reserves three to four years more. Even with the speculative potential ores, the U. S. would have difficulty in getting a 10-year national supply, the department said.

Mineral-Exploration Aid

A rapid, accurate and easy-to-use method, designed by Bureau of Mines metallurgists for determining the heavy-mineral content of beach sands and concentrates produced in mineral-processing plants, is described in a technical report released by the Interior Department.

Copies of the method, Report of Investigations 5340, "Heavy-Liquid Techniques for Rapid Evaluation of Sands by Prospectors and Plant Operators," can be obtained from the Bureau of Mines, Publications Distribution Section, 4800 Forbes St., Pittsburgh, Pa.

Ore Potential

Secretary of the Interior Fred Seaton reported that the ore potential resulting from 291 mineral exploration projects certified by the department's Defense Minerals Exploration Administration is estimated to be worth $490,000,000, based upon December 1955 prices. Seaton said he has been advised by DMEA Administrator C. O. Mittendorf that about $8,500,000 of Government funds had been disbursed on the successful projects through April 30, 1957. This represents about $50,000,000 worth of new ore in the ground for each $1,000,000 of Federal funds invested in these projects.

Copper Fabricating

The third quarter should see "the beginning of a slow recovery" for the copper fabricating industries, particularly brass mills, according to the latest report by the Copper Division of the Business and Defense Services Administration. Despite the anticipated usual seasonal dip in the vacation period, business for the mills and foundries in the third quarter is expected to show an improvement over the corresponding 1956 period, the agency said.

"The copper wire mill industry is expected to continue its high rate of production that has prevailed since 1955 except for a slight softening in the fourth quarter of 1956 and the first quarter of 1957," the report said. "However, as with brass mills and foundries, the outlook for the third quarter of 1957 for wire mills will be stronger."

Heads BDSA Division

The appointment of Walter H. Leo, an executive of the Sheffield Division of the Armco Steel Corp., as director of the Iron and Steel Division, Business and Defense Services Administration, was announced by BDSA Administrator H. B. McCoy.

Iron Ore Resources

Total iron-ore resources of the U. S. are about 75,000,000,000 long tons of crude ore, according to a recent estimate of the Interior's Geological Survey. Since the last summary of iron-ore resources was published in 1955, the estimated total of major deposits has been increased by more than 25,000,000,000 long tons, partly as the result of further exploration and more complete information but principally by the inclusion of additional low-grade material in the Lake Superior region.

United States Duties on Principal Ore and Metal Imports

(Including Revisions in Effect June 30, 1956, Under Geneva Agreements)

(Quantities Are in Pounds Unless Otherwise Stated; n.s.p.f. Stands for "Not Specially Provided For.")

COPPER

NOTE — The excise tax of 4c a pound on copper (which was reduced to 2c a pound by the Geneva Trade Agreement) was suspended in April, 1947, until March 31, 1949, and on expiration it was further suspended until June 30, 1950. The tax was reimposed on July 1, 1950. It was suspended again on May 22, 1951, retroactive to April 1, 1951, and until February 15, 1953, and again until June 30, 1954. Suspension further extended to June 30, 1955, and again until June 30, 1958. If import tax is restored, the 1956 Geneva Agreement provides for 5% reductions effective on June 30 of 1956, 1957 and 1958, provided the price is above 24c; if the price is below 24c the 2c tax would prevail.

Copper ore and concentrates, usable as flux, etc., copper content	free
Copper ore and concentrates, product of Cuba and Philippines, copper content	free
Copper ore and concentrates, copper content	free
Regulus, black, or coarse copper, and cement copper, copper content	free
Unrefined black, blister, and converter copper in pigs or converter bars, copper content	free
Refined copper in ingots, plates or bars, copper content	free
Copper rolls, rods or sheets	1¼c lb.
Copper seamless tubes and tubing	3½c lb.
Copper plain wire	12½%
Copper brazed tubes†	4.90c lb.
Old and scrap copper, fit only for remanufacture; and scale and clippings, copper content	free

BRASS

Brass rods, sheets, plates, bars, strips, Muntz or yellow metal sheets, sheathing, bolts, piston rods, shafting and bronze rods, tubes and sheets	2c lb.
Brass tubes and tubing, seamless	2c lb.
Brass tubes, brazed, angles and channels	6c lb.
Brass and bronze wire	12½%

LEAD

NOTE — Import duties on lead-bearing ores, flue dust, and mattes of all kinds, lead bullion or base bullion, lead in pigs and bars, lead dross, reclaimed lead and antimonial lead were suspended February 12, 1952, and reimposed on June 26, 1952. Lead scrap duty was reimposed July 1, 1952.

Lead-bearing ores and mattes, n. s. p. f., lead content	¾c lb.
Bullion or base bullion, lead content	1 1/16c lb.
Pigs and bars, lead content	1 1/16c lb.
Reclaimed, scrap, dross, lead content	1 1/16c lb.
Babbitt metal and solder, lead content	1 1/16c lb.
Pipe, sheets, shot, glaziers' lead, and wire	1 5/16c lb.
Type metal and antimonial lead, lead content	1 1/16c lb.
White lead	1.05c lb.
Litharge	1¼c lb.
Red lead	15/16c lb.
Orange mineral	1c lb.

ZINC

NOTE — Import duties on zinc-bearing ores, and on zinc in blocks, pigs and slabs were suspended February 12, 1952, and reimposed on July 24, 1952. Tax on old zinc and dross and skimmings reimposed July 1, 1953.

Zinc-bearing ores, except pyrites containing not more than 3% zinc, zinc content	6/10c lb.
Zinc contained in zinc-bearing ores, n. e. s., not recoverable, zinc content	6/10c lb.
Zinc, old and worn out, fit only for remanufacture	¾c lb.
Dross and skimmings	¾c lb.
Zinc in blocks, pigs or slabs	7/10c lb.
Zinc in sheets	1c lb.
Zinc sheets, plated with nickel or other base metal, or solutions	1⅛c lb.
Zinc dust	7/10c lb.
Zinc die-casting alloys	12½%
Zinc oxide and leaded zinc oxides containing not more than 25% lead, dry	3/5c lb.
ground in or mixed with oil or water	1c lb.

MISCELLANEOUS METALS AND ORES

Aluminum, metal and alloys, crude, except alloys elsewhere provided for†	1.30c lb.
Aluminum scrap	free
Aluminum plates, sheets, bars, rods, circles, squares, etc.†	2.70c lb.
Antimony ore, antimony content	free
Antimony metal and regulus	2c lb
Antimony needle or liquidated	¼c lb
Antimony oxide	1c lb
Antimony sulphides	½c lb. & 12½%
Arsenic, metallic†	2.70c lb.
Arsenious acid or white arsenic	free
Bauxite, crude*	free
Bauxite, refined**	¼c lb
Bismuth	1⅞%
Bismuth salts and compounds	35%
Beryllium metal†	22½%
Beryllium ore	free
Cadmium	3¾c lb.
Cadmium flue dust, cadmium content	free
Chrome ore or chromite	free
Chrome or chromium metal†	11%
Cobalt metal	free
Cobalt ore and concentrates, cobalt content	free
Magnesium, metallic†	14.30c lb.
Magnesium powder, sheets, wire†	18c lb. & 9%
Magnesium alloys†	20c & 10%
Magnesium scrap	free
Manganese ores, containing over 10% manganese, manganese content	¼c lb., except Cuba, free
Molybdenum ore or concentrates, molybdenum content†	31½c lb.
Nickel ore, matte and oxide	free
Nickel and alloys, nickel chief value, n. s. p. f., in pigs, ingots, shot, cubes, grains, cathodes, or similar forms	1¼c lb.
Nickel, bars, rods, plates, sheets, castings, strips, wire or electrodes	12½%
Nickel scrap	free
Nickel tubes, tubing	6¼%
(if cold rolled, drawn or worked — 2½% extra)	
Platinum, grain, nuggets, sponge and scrap, oz. troy	free
Platinum in ingots, bars, sheets, or plates, not less than ⅛ in. thick, oz. troy	free
Platinum, ores, platinum content, oz. troy	free
Quicksilver or mercury	25c lb.
Selenium and salts	free
Tantalum	12½%
Tin ore, cassiterite, and black oxide of tin, tin content	free
Tin in bars, blocks, pigs, grain, granulated, and scrap, and alloys, chief value tin, n. s. p. f.	free
Tungsten ore or concentrates, tungsten content	50c lb.

***Crude bauxite import duty suspended to July 15, 1958. **Under Public Law 25 alumina imported for use in aluminum production is free for entries from July 17, 1956 to July 16, 1958. †Tariff to be reduced 5% on June 30, 1958, under Geneva Agreement which expires on June 30, 1959.**

SUMMER LULL ADDS TO WOES OF METAL INDUSTRY; SMELTER COPPER CUT TO 28¼c LB., ZINC TO 10c

Lead Unchanged at 14c; Production Cutbacks Believed Necessary for Three Major Metals; Tin Quotations Drop; Aluminum Price Increase Seen Likely

July 16, 1957

THE USUAL Summer lull added to the woes of the metal market during the month in review. Demand was light for virtually all metals and it was believed further production cutbacks in copper, lead and zinc were necessary to stabilize these markets. Although primary producers maintained their electro copper price at 29.25c a pound delivered, the level established on June 19 following a sharp drop of 2.75c a pound, custom smelters reduced their electro quotation another 0.50c, on July 1, to 28.50c a pound. Zinc also was reduced 0.50c a pound on July 1 to a basis of 10.00c a pound East St. Louis for the Prime Western grade. Lead was unchanged from the 14.00c a pound New York level established on June 11.

Tin prices continued to slide during the month in review. The only upward movement in the price of a major metal is the increase anticipated for aluminum as the result of a 7 per cent boost in workers' wages scheduled for August 1.

Smelter Copper Cut 0.50c

Failing to interest copper consumers with their offers at 29.00c a pound delivered, which level was established on June 19 as a result of a 1.00c reduction, custom smelters reduced their selling price another 0.50c to a basis of 28.50c delivered on July 1. This put the smelter quotation 0.75c a pound below the producers' level of 29.25c.

Not since August 1953 has custom smelter copper been quoted as low as 28.50c a pound. There was no immediate response on the part of domestic consumers. Witnessing the drop in the Rhodesian Selection Trust quotation (down £10 to £220 a long ton, equivalent to 27.50c a pound, on July 1), and the weakness on the London Metal Exchange, and with many fabricating plants shut down for Summer vacations, there has been no incentive for consumers to place business. Fabricators also were said to be carrying a substantial reserve of copper.

Custom smelters, on July 15, were paying less for scrap copper, bidding 22.625c a pound for No. 2 heavy copper and wire scrap, compared with the last quotation in this space of 23.25c, as of June 21.

Katanga Price in U. S.

Effective August 1, 1957, the price quoted for Katanga copper, delivered c.i.f. New York for consumption in the United States, will become identical with the price quoted by Union Miniere du Haut Katanga for its abroad c.i.f. European ports. At this writing the current Katanga copper price is 27.60c a pound f.a.s. New York. Up to now, the c.i.f. New York price has been lower than the c.i.f. European price by the amount of freight and insurance costs between New York and Europe. This differential at the present time amounts to 1.00c a pound.

SMELTER COPPER CUT TO 28¼c

Custom smelters on July 19 reduced their electrolytic selling prices to 28.25c a pound delivered, a reduction of 0.25c a pound.

Chile Production

The copper industry continued to focus its attention on Chile. Early in July the Chilean Government took a second look at the copper situation. The Chilean Minister of Mines was reported to have requested the Copper Division to analyze the production situation and it was indicated that the two American companies in Chile, Anaconda and Kennecott, would be authorized to cut their scheduled 1957 production by 10 per cent. Anaconda and Kennecott have estimated their 1957 Chilean output at 460,000 metric tons.

Previous advices from Chile had been to the effect that no curtailment was being given any consideration. So far no definite action has been taken by Chile, despite the second look.

June Statistics

Highlights of the June copper statistics were higher primary production abroad and practically no change in the domestic primary production rate; a drop in domestic shipments: reduction in U. S. refined output; and a continued rise in refined stocks both in the U. S. and abroad at the end of that month.

Domestic refined copper figures for June follow, in tons, with May totals in parentheses: production, 134,270 (151,045); deliveries to fabricators, 101,993 (120,336); stocks at end of month, 165,549 (155,365).

Lead, Zinc for Stockpile

The General Services Administration asked for tenders, by June 26, for delivery of lead and zinc to the Government stockpile by August 15. Both the lead and zinc must have been mined and refined in the United States.

Office of Defense Mobilization officials, when making the June call for lead and zinc, said the GSA (which is the Government buying agency) would purchase the same amount of the metals as it did in May for July delivery.

Approximately 15,000 tons of lead were acquired by the Government in May for the long term and the supplemental stockpiles. The GSA purchases of domestic lead in May were around 5,000 tons, with the remaining 10,000 tons shipped in May under barter deals consummated some time ago. In some quarters it was believed that the GSA bought close to 10,000 tons of zinc in May for July delivery.

Zinc Reduced 0.50c

The price of zinc was reduced another 0.50c a pound on July 1 to a basis of 10.00c East St. Louis for the Prime Western grade. While other sellers did not fall in line pricewise immediately, it was freely admitted no consumer was willing to pay more than 10.00c. Eventually, all sellers came down to the 10.00c level. The cause of the price decline was twofold, over-production and the virtual cessation of barter deals.

The announcement by New Jersey Zinc Co. on July 15 that it had joined the growing list of big domestic miners and processors of zinc that have been forced to reduce output was considered another step in the right direction, curtailment of output. The company announced it was curtailing refined zinc production by a total of 2,500 tons a month at its Palmerton, Pa., and Depue, Ill., smelters. New Jersey Zinc stated the cuts were forced by a heavy oversupply of zinc in the U. S. due to an uncontrolled flood of foreign imports. "The excessive imports have driven the price down from 13.50c to 10.00c a pound within the past 60 days," company officials said.

Other Cutbacks

Other recent cutbacks in refined zinc production include: American Smelting & Refining Co.—2,700 tons a month at its Corpus Christi, Tex., plant; American Zinc, Lead & Smelting Co.—1,500 tons a month at its Dumas, Tex., and Fort Smith, Ark., smelting plants. A.S.&R. also has closed three zinc mines in the U. S. having production of 3,000 tons a month.

Strikes closed Eagle-Picher Co.'s Henryetta, Okla., zinc smelter, which is reported to be capable of turning out 3,000 tons of slab zinc a month, and the Austinville, Va., zinc mine of New Jersey Zinc, which had been producing at the rate of 3,650 tons of zinc and lead concentrates a month, mostly zinc concentrates.

U. S. smelter production of refined zinc has averaged 93,756 tons a month for the first half of 1957, while deliveries to U. S. industry averaged only 62,075 tons a month for the same period. Shipments of refined zinc to the U. S. Government that was processed at U. S. plants

averaged 19,499 tons for the initial six months of 1957.

June Zinc Statistics

A study of the June zinc statistics indicates quite clearly that some attempt has been made to cut production but that evidently this is far from sufficient. Following are the June statistics for zinc (all grades), in tons, with the May totals in parentheses: production, 90,719 (96,855); total shipments, 69,957 (89,693); shipments to domestic consumers, 54,275 (60,729); shipments to Government, 14,324 (26,858); stocks at end of month, 133,455 (112,693).

Lead Remains Slow

There were few new developments in the lead market. Consumers were not making any extended effort to place business except as they needed the metal, thus making for a rather quiet trading situation.

Most business being placed currently was for July lead, although some consumers were in the market for August metal but on a small scale. July business was done mainly at the flat 14.00c a pound New York price, while August orders were placed at the average price basis.

The seven-week strike at the Monterrey, Mexico, lead refinery of American Smelting & Refining Co. has been settled with the workers returning to their jobs on July 13. The strike began on May 27 but did not affect the mines and lead smelter that supply this refinery. The Monterrey refinery had been producing approximately 12,000 tons of refined lead a month prior to the disruption of its operation by the strike.

Tin Prices Decline

Tin prices at New York moved downward during the month in review. Spot Straits was available at 96.00c a pound on July 15, as compared with the last previously noted price in this space of 98.50c, on June 13.

The high for the June 13-July 15 period was the 98.50c at the beginning of the period and the low was the 96.00c registered on July 15.

Aluminum Price Rise Likely

In spite of the fact that the consuming demand for aluminum has tapered off, the probability is that the price of the metal (pig aluminum) will be advanced early in August. In accordance with the agreement that aluminum producers have with their workers, wages will be boosted by approximately 7 per cent on August 1. Aluminum producers, according to some factors in the industry, have no cushion to absorb this wage increase.

It is pointed out that to compensate for the higher wage cost there would have to be an increase on all aluminum products of about 1.50c a pound, and in order to get this increase the base price of pig aluminum would have to move up about 1.00c a pound. The last price increase was 1.00c a pound that took place in August, 1956, following the boost in wages at that time. In addition to the wage increase again facing the industry on August 1, aluminum producers pointed out that since 1939 their production costs have gone up all along the line. Primary aluminum 30-pound ingot, 99 per cent plus grade, currently is priced at 27.10c a pound, f.o.b.

Although there has been no pressing demand for secondary aluminum ingots, prices for smelters' alloys have edged upwards. In some instances, smelters said they were raising their alloy prices in order to at least maintain a spread between what they pay for scrap aluminum and what they get for their secondary ingots, which will permit them to operate profitably.

Silver Unchanged

The price of silver at New York was maintained at 90.25c an ounce. The 90.25c level was established on June 14, following an increase of 0.125c an ounce.

Quicksilver Steady

Spot quicksilver was unchanegd at $255 to $257 per flask of 76 pounds. Business was described as mainly of a routine nature.

Platinum Easier

Although refiners maintained their platinum quotations at $92 to $95 an ounce, the precious metal was available in the dealer market at $88 an ounce. There were reports of an occasional sale slightly below the dealer level.

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Daily Metal Quotations in June, 1957

The following quotations are taken from the Daily Metal Reporter
(In Cents Per Pound)

JUNE	Copper					Tin		Lead		Zinc					Aluminum	Antimony	Silver
	Producers' Price Del. Conn.	Custom Smelters' or Outside Price	Electro f. o. b. Refinery	Lake Del.	Average Electrolytic Export Price F.a.s. N. Y.	Straits New York Spot	Straits New York Prompt	New York	Outside St. Louis	Prime West. f. o. b. E. St. Louis	Prime West. Del. N. Y.	Brass Spec. f. o. b. E. St. Louis	High Grade Delivered	Spec. High Grade Delivered	30-Lb. Ingot 99% Plus (f. o. b.)	Domestic Spot 99.5% f.o.b. Laredo	(Cents Per Ounce) New York
1	32.00	30.00	30.60	32.00	29.75	....	....	15.00	14.80	11.50	12.00	11.75	12.85	13.25	27.10	33.00	....
3	32.00	30.00	30.60	32.00	29.625	98.50	98.50	15.00	14.80	11.50	12.00	11.75	12.85	13.25	27.10	33.00	90.875
4	32.00	30.00	30.60	32.00	29.625	98.375	98.375	15.00	14.80	11.00	11.50	11.25	12.35	12.75	27.10	33.00	90.875
5	32.00	30.00	30.60	32.00	29.625	98.50	98.50	15.00	14.80	11.00	11.50	11.25	12.35	12.75	27.10	33.00	90.875
6	32.00	30.00	30.60	32.00	29.25	98.375	98.375	15.00	14.80	11.00	11.50	11.25	12.35	12.75	27.10	33.00	90.875
7	32.00	30.00	30.60	32.00	29.25	98.50	98.50	15.00	14.80	11.00	11.50	11.25	12.35	12.75	27.10	33.00	90.875
8	32.00	30.00	30.60	32.00	29.25	....	....	15.00	14.80	11.00	11.50	11.25	12.35	12.75	27.10	33.00	....
10	32.00	30.00	30.60	32.00	29.25	98.375	98.375	15.00	14.80	11.00	11.50	11.25	12.35	12.75	27.10	33.00	90.625
11	32.00	30.00	30.60	32.00	29.25	98.125	98.125	14.00	13.80	11.00	11.50	11.25	12.35	12.75	27.10	33.00	90.625
12	32.00	30.00	30.60	32.00	29.25	98.25	98.25	14.00	13.80	11.00	11.50	11.25	12.35	12.75	27.10	33.00	90.625
13	32.00	30.00	30.60	32.00	29.25	98.50	98.50	14.00	13.80	11.00	11.50	11.25	12.35	12.75	27.10	33.00	90.125
14	32.00	30.00	30.60	32.00	29.25	98.25	98.25	14.00	13.80	11.00	11.50	11.25	12.35	12.75	27.10	33.00	90.25
15	32.00	30.00	30.60	32.00	29.25	....	....	14.00	13.80	11.00	11.50	11.25	12.35	12.75	27.10	33.00	....
17	32.00	30.00	30.60	32.00	28.75	98.25	98.25	14.00	13.80	11.00	11.50	11.25	12.35	12.75	27.10	33.00	90.25
18	32.00	30.00	30.60	32.00	28.375	98.125	98.125	14.00	13.80	11.00	11.50	11.25	12.35	12.75	27.10	33.00	90.25
19	30.625	29.00	30.10	29.25	28.375	98.125	98.00	14.00	13.80	10.50	11.00	10.75	11.85	12.25	27.10	33.00	90.25
20	29.25	29.00	28.275	29.25	28.00	97.875	97.75	14.00	13.80	10.50	11.00	10.75	11.85	12.25	27.10	33.00	90.25
21	29.25	29.00	28.275	29.25	28.00	97.75	97.75	14.00	13.80	10.50	11.00	10.75	11.85	12.25	27.10	33.00	90.25
22	29.25	29.00	28.275	29.25	28.00	....	....	14.00	13.80	10.50	11.00	10.75	11.85	12.25	27.10	33.00	....
24	29.25	29.00	28.275	29.25	28.00	97.50	97.50	14.00	13.80	10.50	11.00	10.75	11.85	12.25	27.10	33.00	90.25
25	29.25	29.00	28.275	29.25	28.00	97.50	97.50	14.00	13.80	10.50	11.00	10.75	11.85	12.25	27.10	33.00	90.25
26	29.25	29.00	28.275	29.25	28.00	97.375	97.375	14.00	13.80	10.50	11.00	10.75	11.85	12.25	27.10	33.00	90.25
27	29.25	29.00	28.275	29.25	28.00	97.375	97.25	14.00	13.80	10.50	11.00	10.75	11.85	12.25	27.10	33.00	90.25
28	29.25	29.00	28.275	29.25	27.75	97.375	97.25	14.00	13.80	10.50	11.00	10.75	11.85	12.25	27.10	33.00	90.25
29	29.25	29.00	28.275	29.25	27.75	....	....	14.00	13.80	10.50	11.00	10.75	11.85	12.25	27.10	33.00	....
AV.	**30.955**	**29.60**	**29.351**	**30.90**	**28.755**	**98.05**	**98.025**	**14.32**	**14.12**	**10.84**	**11.34**	**11.09**	**12.19**	**12.59**	**27.10**	**33.00**	**90.456**
HI.	**32.00**	**30.00**	**31.60**	**32.00**	**29.75**	**98.50**	**98.50**	**15.00**	**14.80**	**11.50**	**12.00**	**11.75**	**12.85**	**13.25**	**27.10**	**33.00**	**90.875**
LO.	**29.25**	**29.00**	**28.60**	**29.25**	**27.75**	**97.375**	**97.25**	**14.00**	**13.80**	**10.50**	**11.00**	**10.75**	**11.85**	**12.25**	**27.10**	**33.00**	**90.125**

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Copper Brands

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Brand or Marks	Producer	Grade
B. E. R.	American Smelting & Refining Co. (Baltimore, Md.)	Electrolytic
P. A.	American Smelting & Refining Co. (Maurer, N. J.)	Electrolytic
T	American Smelting & Refining Co. (Tacoma, Wash.)	Electrolytic
B. & M.	Anaconda Copper Mining Co.	Electrolytic
AE	Andes Copper Mining Co.	Electrolytic
BOLIDEN	Bolidens-Gruvaktiebolag	Electrolytic
C. C. R.	Canadian Copper Refiners Ltd. (Montreal)	Electrolytic
C de P Peru	Cerro de Pasco Corporation	Electrolytic
C. C. C.	Chile Copper Company	Electrolytic
F E C	Falconbridge Nickel Mines, Ltd.	Electrolytic
K U E	Kennecott Copper Corp.	Electrolytic
L. M. C.	Lewin Metals Corporation	Electrolytic
M U F	Mufulira Copper Mines, Ltd.	Electrolytic
N A	Norddeutsche Affinerie	Electrolytic
O R C	Ontario Refining Co., Ltd.	Electrolytic
A. L. S.	Philps Dodge Refining Corp. (For Adolph Lewisohn Selling Corp.)	Electrolytic
L. N. S.	Phelps Dodge Refining Corp.	Electrolytic
P * D	Phelps Dodge Corporation	Electrolytic
N. E. C.	Raritan Copper Works	Electrolytic
R E C	Rhokana Corporation	Electrolytic
B O R	Rudnici Bakra i Topionice	Electrolytic
U M K	Union Miniere du Haut Katanga	Electrolytic
D R W	†United States Metals Refining Co.	Electrolytic
AMCO	†United States Metals Refining Co.	Electrolytic
OFHC	†United States Metals Refining Co.	Electrolytic
W E K	Zinnwerke Wilhelmsburg G.m.b.H.	Electrolytic

†Subsidiary, The American Metal Co., Ltd.

Brand or Marks	Producer	Grade
C & H	Calumet & Hecla Consolidated Copper Co.	Lake
C. R.	Copper Range Company	Lake
Q. M. CO.	Quincy Mining Company	Lake

Brand or Marks	Producer	Grade
B. C. R.	British Copper Refiners, Ltd.	Fire Refined High Conductivity
N. H. E.	Nassau Smelting & Refining Co., Inc.	Fire Refined High Conductivity
A M CO R H C	United States Metals Refining Company	Fire Refined High Conductivity

Brand or Marks	Producer	Grade
* * * (3 Star)	Braden Copper Company	Fire Refined (other than Lake & Fire Refined High Conductivity)
K C M	Kennecott Copper Corporation	
M T D	Messina (Transvaal) Development Co.	
P. D. M.	Phelps Dodge Corporation	
R	†United States Metals Refining Company	

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Anaconda Copper Mining Co.
Andes Copper Mining Co.
Bolidens Gruvaktiebolag
Canadian Copper Refiners, Ltd.
Cerro de Pasco Copper Corp.
Chile Copper Company
Consolidated Mining & Smelting Co.
Falconbridge Nickel Mines, Ltd.
Kennecott Copper Corp.
Lewin Metals Corp.
Mufulira Copper Mines, Ltd.
Norddeutsche Affinerie
Ontario Refining Co., Ltd.
Phelps Dodge Refining Corp.
Phelps Dodge Corporation
Raritan Copper Works
Rhokana Corporation
Rudnici Bakra i Topionice
Union Miniere du Haut Katanga
United States Metals Refining Co.
Zinnwerke Wilhelmsburg G.m.b.H.

Lead Brands

Refined At	Producer	Brand Mark
Federal, Ill., U. S.	American Smelting & Refining Co.	*ALTON
Carteret, N. J., U. S.	United States Metals Refining Co.	**A M CO
Monterrey, Mexico	American Smelting & Refining Co.	*ASARCO MONTERREY
Port Pirie, Australia	Broken Hill Associated Smelters	*B.H.A.S.
Indianapolis, Ind., U. S.	National Lead Co., American Lead Plant	†aBLUE ARROW AMERICAN LEAD CORP
Braubach a/Rhein, Germany	Blei-und Silberhutte Braubach	*Braubach dopp. raff. Deutschland
Idaho, U. S.	Bunker Hill Smelter	*BUNKER "C" HILL
Orya, Peru	Cerro de Pasco Copper Corp.	*CERRO PERU
Collinsville, Ill., U. S.	St. Louis Smelting & Refining Co.	†aCHEMICAL ST. L. S. & R. CO.
Monterrey, N. L., Mexico	Compania Metalurgica Penoles, S.A.	**C.M.F. y A.M.
Alton, Ill., U. S.	St. Joseph Lead Company	*DOE RUN
Oker, Germany	Unterharzer Berg- und Huttenwerke	*HARZ 99.985, HARZ 99.9
Joplin, Mo., U. S.	Eagle-Picher Mining & Smelting Co.	*EAGLE-PICHER
Kamioka, Japan	Mitsui Mining Co.	*E.M.K.
Stolberg, Rhineland, Germany	Stolberger Zinc Aktiengesellschaft fur Bergbau und Hattenbetrieb	*Eschweiler raffine
Federal, Ill., U. S.	American Smelting & Refining Co.	*FEDERAL
Chicago, Ill., U. S.	Goldsmith Bros. Smelting & Refining Co.	†G B
Hoboken, Belgium	Societe Generale Metallurgizue de Hoboken	*H.E.R. Escaut
Alton, Ill., U. S.	St. Joseph Lead Company	*HERCULANEUM
Omaha, Neb., U. S.	International Smelting & Refining Co.	*ILR
Monsanto, Ill., U. S.	Lewin-Mathes Co.	†MONSANTO
Monteponi, Italy	Societa di Monteponi	*Monteponi
San Gavino Monreale, Sardinia, Italy	Montevecchio Societa Italiana del Piombo e dello Zinco	*Montevecchio
Hammond, Ind., U. S.	Metals Refining Company	†M R CO METALS REFINING CO.
Omaha, Neb., U. S.	American Smelting & Refining Co.	*OMAHA & GRANT
Overpelt, Belgium	Compagnie des Metaux d-Overpelt-Lommel et de Corphalie, S.A.	*Overpelt extra-raffine O.V.-L.L.-Dur.
Megrine, Tunis	Ste. Min. & Metall. de Penarroya	*Penarroya
Penarroya, Sopwith & Cartagena, Spain	Ete Min. & Met. de Penarroya	*Penarroya
Perth Amboy, N. J., U. S.	American Smelting & Refining Co.	*PERTH AMBOY
Genoa, Italy	Societa di Pertusola	*Pertusola
Alton, Ill., U. S.	St. Joseph Lead Company	*ST. JOE
Collinsville, Ill., U. S.	St. Louis Smelting & Refining Co.	†aST. L. S. & R. CO.
Selby, Calif., U. S.	American Smelting & Refining Co.	*SELBY
Trail, B. C., Canada	Consolidated Mining & Smelting Co. of Canada, Ltd	*TADANAC
Baelen-Usines, Belgium	Ste des Mines and Founderies de Zinc de la Vieille-Montagne Anglem	*Three Stars Vieille-Montagne Bar
Mexica, Yugoslavia	Central European Mines, Limited	*TRECA
Perth Amboy, N. J., U. S.	American Smelting & Refining Co.	*TSUMCO
Hoboken, Belgium	The Tsumeb Corporation	*TSUMCO
Midvale, Utah, U. S.	United State Smelting, Refining & Mining Company	*USS CO
E. Chicago, Ind., U. S.	United States Smelting, Refining & Mining Company	*U S S CO ELECTRO
Norfolk, Va., U. S.	Virginia Lead Smelting Corp., The	†aVIRGINIA
Staten Island, N. Y., U. S. A.	Nassau Smelting & Refining Co.	Nassau Blue
Newark, N. J., U. S. A.	Hudson Smelting & Refining Co.	Hudson
Philadelphia, Pa., U. S. A.	Bers & Co., Inc.	Schuylkill

*Deliverable against Commodity Exchange, Inc., Lead Contracts without Certificate of Assay.

**Subsidiary of the American Metal Co., Ltd.

†Deliverable against Commodity Exchange, Inc., Lead Contracts with Certificate of Assay of one of the Official Assayers of the Exchange.

aSubsidiary of National Lead Co.

Copper Statistics Reported by Copper Institute

Combined Totals in U. S. A. and Outside U. S. A.

(In tons of 2,000 pounds)

	Crude Production		Refined	Deliveries to	Refined Stock	Stock Increases or Decreases		
	Primary	Secondary	Production	Customers	End of Period	Blister	Refined	Total
1955 Total	2,613,662	133,065	2,728,309	2,744,391	221,331	+18,418	— 8,552	+11,112
1956								
June	238,814	11,360	251,382	236,714	266,221	+ 1,309	+14,091	+15,130
July	233,182	11,174	240,633	198,800	303,225	+ 3,723	+37,004	+40,727
Aug.	241,295	10,005	242,814	224,546	315,572	+ 8,486	+12,347	+ 20,833
Sept.	221,401	8,126	217,522	219,479	309,351	+12,005	— 6,221	+ 5,784
Oct.	255,442	13,924	263,752	234,080	333,952	+ 5,614	+24,601	+30,215
Nov.	249,360	10,204	254,377	239,181	345,181	+ 5,187	+11,229	+16,416
Dec.	236,512	13,124	250,173	237,003	354,420	— 537	+ 9,239	+ 8,702
Total	2,862,839	152,536	2,987,060	2,830,407	354,420	+28,415	+133,089	+161,402
1957								
Jan.	240,790	15,514	256,729	263,014	344,972	— 245	— 9,448	— 9,693
Feb.	235,679	10,577	242,952	214,796	370,128	+ 3,304	+25,156	+28,460
Mar.	244,407	11,850	264,649	263,271	369,256	— 8,392	— 872	— 9,264
Apr.	234,909	12,369	252,857	253,295	363,463	— 5,579	— 5,793	—11,372
May	249,564	10,456	275,323	256,379	376,761	—15,303	+13,298	— 2,005
June	251,720	9,492	251,802	220,052	402,294	+ 9,411	+23,533	+32,944

In U. S. A.

1955 Total	1,036,702	124,760	1,467,448	1,446,354	61,554	.....	+14,446	.....
1956								
June	98,496	12,471	136,713	131,299	60,671	.....	+ 4,463	.....
July	84,787	10,387	125,401	97,698	87,944	.....	+27,273	.....
Aug.	91,282	9,545	122,108	109,618	96,450	.....	+ 8,506	.....
Sept.	88,659	7,367	112,484	104,486	93,202	.....	— 3,248	.....
Oct.	95,109	12,621	136,379	113,353	106,120	.....	+12,918	.....
Nov.	90,573	8,940	132,970	114,524	116,516	.....	+10,396	.....
Dec.	92,231	12,352	129,839	99,594	120,645	.....	+ 4,129	.....
Total	1,133,134	139,584	1,580,287	1,465,899	120,645	.....	+50,091	.....
1957								
Jan.	94,783	14,683	139,150	119,925	118,564	.....	— 2,081	.....
Feb.	92,508	8,941	134,291	101,565	136,502	.....	+17,938	.....
Mar.	96,363	10,355	143,961	113,571	140,191	.....	+ 3,689	.....
Apr.	98,910	11,160	144,013	116,716	139,842	.....	— 349	.....
May	96,334	9,618	151,045	120,336	155,365	.....	+15,523	.....
June	95,641	8,613	134,270	101,993	165,549	.....	+10,184	.....

Outside U. S. A.*

1955 Total	1,576,960	8,305	1,260,861	1,298,037	159,777	.....	—21,752	.....
1956								
June	140,318	1,136	114,669	105,415	205,550	.....	+ 9,628	.....
July	148,395	787	115,232	101,102	215,281	.....	+ 9,731	.....
Aug.	150,013	460	120,706	114,928	219,122	.....	+ 3,841	.....
Sept.	132,742	759	105,038	114,993	216,149	.....	— 2,973	.....
Oct.	160,333	1,303	127,373	120,727	227,832	.....	+11,683	.....
Nov.	158,787	1,264	121,407	124,657	228,665	.....	+ 833	.....
Dec.	144,281	772	120,334	137,409	233,775	.....	+ 5,110	.....
Total	1,729,705	12,952	1,406,773	1,364,508	233,775	.....	+73,998	.....
1957								
Jan.	146,097	831	117,579	143,089	226,408	.....	— 7,367	.....
Feb.	143,171	1,636	108,661	113,231	233,626	.....	+ 7,218	.....
Mar.	148,044	1,495	120,688	149,700	229,065	.....	— 4,561	.....
Apr.	135,999	1,209	108,844	136,579	223,621	.....	— 5,444	.....
May	153,230	838	124,278	136,043	221,396	.....	— 2,220	.....
June	156,079	879	117,531	118,059	234,745	.....	+13,349	.....

* Excluding Russia, Yugoslavia, Norway, Sweden, Japan and Australia.

Electrolytic Copper

Producers' Price, Del. Valley
Monthly Average Prices
(Cents Per Pound)

	1954	1955	1956	1957
Jan.	29.88	30.24	43.00	36.00
Feb.	29.88	33.00	44.03	33.318
Mar.	29.93	33.222	46.00	32.00
Apr.	29.98	36.00	46.00	32.00
May	30.00	36.00	46.00	32.00
June	30.00	36.00	46.00	30.955
July	30.00	36.00	41.56	....
Aug.	30.00	37.81	40.00	....
Sept.	30.00	43.00	40.00	....
Oct.	30.00	43.00	39.308	....
Nov.	30.00	43.00	36.00	....
Dec.	30.00	43.00	36.00	....
Ave.	29.27	37.522	41.992	....

Electrolytic Copper

Custom Smelters' Price, Del. Valley
Monthly Average Prices
(Cents Per Pound)

	1954	1955	1956	1957
Jan.	29.75	30.48	50.22	34.87
Feb.	29.75	33.00	52.07	32.273
Mar.	29.866	33.667	53.11	30.952
Apr.	29.965	36.00	48.88	31.24
May	30.00	36.00	44.221	30.163
June	30.00	36.00	40.00	29.60
July	30.00	36.00	38.14	....
Aug.	30.00	40.14	39.32	....
Sept.	30.00	50.00	39.00	....
Oct.	30.00	45.99	37.192	....
Nov.	30.00	45.84	35.96	....
Dec.	30.00	49.42	35.45	....
Aver.	29.944	39.38	42.797	....

Lake Copper

Producers' Price Delivered
Monthly Average Prices
(Cents Per Pound)

	1954	1955	1956	1957
Jan.	30.00	30.12	43.00	36.00
Feb.	30.00	33.00	43.783	33.182
Mar.	30.00	33.56	46.00	32.00
Apr.	30.00	36.00	46.00	32.00
May	30.00	36.00	46.00	32.00
June	30.00	36.00	46.00	30.90
July	30.00	36.00	41.68	....
Aug.	30.00	37.46	40.00	....
Sept.	30.00	43.00	40.00	....
Oct.	30.00	43.00	39.321	....
Nov.	30.00	43.00	36.00	....
Dec.	30.00	43.00	36.00	....
Aver.	30.00	37.51	41.975	....

Fabricators' Copper Statistics

(In tons of 2,000 pounds)

	Fabricators' Stocks of Refined Cop.	Unfilled Purchases of Refined by Fab. from Producers	Fabricators' Working Stocks	Unfilled Sales by Fabricators to Customers	Actual Copper Consmd. by Fabricators	Excess Fabricators' Stocks Over Orders Bkd.
1951						
Total	280,402	32,147	295,385	303,050	1,392,111	—285,886
1952						
Total	333,455	32,652	292,157	275,312	1,389,451	—201,362
1953						
Total	380,881	25,022	309,664	170,917	1,375,869	— 74,678
1954						
Total	.....	.....	.....	.....	1,232,090	.....
1955						
Jan.	334,105	66,122	302,658	159,016	136,539	— 61,447
Feb.	323,425	75,840	301,597	180,898	118,786	— 83,230
Mar.	311,235	85,859	301,937	187,827	143,544	— 92,670
Apr.	316,575	88,992	304.117	206,308	115,073	—103,858
May	327,343	111,715	309,219	323,279	113,485	—102,440
June	327,696	126,703	309,972	234,578	132,377	— 90,151
July	312,587	165,505	301,048	286,095	75,846	—109,051
Aug.	304,097	150,854	303,089	283,653	97,688	—131,791
Sept.	334,996	133,391	314,111	270,102	113,628	—115,826
Oct.	353,469	135,075	313,048	275,255	115,453	— 99,759
Nov.	373,314	139,855	313,779	283,953	122,332	— 84,563
Dec.	389,974	139,094	314,145	293,264	127,006	— 78,341
Total	.....	.....	.....	.....	1,412,287	.....
1956						
Jan.	376,753	143,815	312,128	305,942	138,711	— 97,502
Feb.	388,823	135,637	319,279	282,314	130,923	— 77,133
Mar.	392,143	140,348	319.056	291,465	135,746	— 78,030
Apr.	413,979	135,071	319,247	266,239	118,839	— 36,436
May	435,083	131,023	318,592	249,352	122,253	— 1,838
June	451,126	114,223	324,970	227,097	113,835	+ 13,282
July	465,015	109,040	334,584	220,810	81,275	+ 18,661
Aug.	457,679	115,295	338,818	221,975	117,937	+ 12,181
Sept.	445,679	114,981	338,488	204,154	115,867	+ 18,018
Oct.	440,706	112.893	336,856	198,517	119,440	+ 18,226
Nov.	435,216	110,792	335,829	178,814	119,441	+ 31,365
Dec.	437,187	117,601	336,217	183,834	99,223	+ 34,737
Total	.....	.....	.....	.....	1,416,278	.....
1957						
Jan.	435,635	107,231	335,944	178,326	119,517	+ 28,596
Feb.	422,266	110,174	334,542	178,913	114,298	+ 18,985
Mar.	429,410	104,551	338,454	164,623	106,170	+ 30,884
Apr.	429,708	98,638	335,921	164,410	117,041	+ 28,015
May	434,852	92,943	336,697	170,476	115,370	+ 20,622

Scrap Copper Receipts by Custom Smelters and Refineries in United States*

(In Short Tons)

	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957
Jan.	10,172	17,084	15,763	6,640	4,528	6,486	9,859	11,047	14,322	17,506
Feb.	11,890	20,238	12,500	5,153	3,633	10,337	8,490	15,198	14,497	11.145
Mar.	11,954	20,678	13,538	7,912	5,243	19,991	9,738	12,198	15,921	13,934
Apr.	15,125	15,968	12,304	8,553	6,214	16,583	9,004	13,162	17,233	14,288
May	16,357	14,237	8,749	8,458	8,033	10,857	8,687	15,133	20,805	12,397
June	11,178	8,809	20,523	8,628	4,425	10,945	13,309	14,765	14,758	11,949
July	8,370	7,782	10,040	6,642	5,188	9,063	10,260	9,988	12,632	....
Aug.	17,081	8,246	10,452	6,113	5,003	7,137	10,100	12,197	12,510	....
Sept.	16,001	10,980	4,903	3,561	4,667	9,042	10,641	15,037	9,518	....
Oct.	10,854	6,401	9,459	3,336	4,602	10,065	11,662	12,897	15,570	....
Nov.	7,625	15,347	9,237	3,179	4,724	7,815	10,879	9,865	11,369	....
Dec.	11,826	10,533	7,178	4,538	6,208	11,476	14,876	13,180	14,613	....
Total	147,931	156,303	142,067	71,812	62,470	129,798	127,449	154,714	173,748	

* As compiled by Copper Institute.

Brass and Bronze Ingot Monthly Shipments

(Net Tons)

The following figures showing the combined shipments of ingot brass and bronze are compiled by the Ingot Brass and Bronze Industry and represent in excess of 95 per cent of the deliveries of the entire industry.

	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957
Jan.	27,841	26,998	19,456	18,874	28,415	28,315	24,423	20,661	25,201	27,736	27,736
Feb.	24,686	22,487	15,026	18,487	27,168	24,211	25,429	19,920	25,349	24,949	20,769
Mar.	17,477	24,282	14,550	22,494	31,997	23,890	28,256	23,653	29,713	28,310	21,948
Apr.	24,577	25,177	10,695	22,118	30,472	22,547	25,044	24,746	27,641	25,808	23,507
May	19,526	23,716	11,114	23,643	33,267	21,740	21,660	22,269	23,708	23,437	22,037
June	16,929	24,401	9,696	25,093	33,817	21,274	20,818	22,348	23,141	18,842	....
July	16,728	20,456	10,220	21,609	32,016	18,947	19,321	17,074	18,513	17,364	....
Aug.	18,589	24,098	14,194	26,689	25,285	21,807	20,156	21,684	27,018	23,812	....
Sept.	19,025	23,641	16,208	28,811	22,285	22,770	21,463	22,464	26,349	20,929	....
Oct.	22,806	21,559	18,026	32,240	23,124	25,811	22,280	24,080	25,228	23,045	....
Nov.	21,666	21,731	18,488	31,748	23,544	23,441	21,860	23,061	25,102	21,818	....
Dec.	23,863	20,954	17,960	28,575	20,987	22,983	20,541	21,274	21,448	18,046	....
Total	263,711	279,500	175,643	303,563	332,378	277,736	271,251	263,233	298,406	274,096	...
Aver	21,976	23,292	14,637	25,297	27,615	23,145	22,604	21,936	24,867	22,841	....

Mine Production of Copper in United States

(U. S. Bureau of Mines)

(In short tons)

	Eastern	Missouri	Western	Total
1953				
Ttl.	38,900	2,374	885,174	926,448
1954				
Ttl.	40,302	1,925	793,241	835,472
1955				
Dec.	6,758	179	81,638	88,575
Ttl.	68,622	2,140	921,838	992,600
1956				
Jan.	6,674	163	88,277	95,114
Feb.	6,688	164	82,519	89,371
Mar.	7,347	198	90,599	98,104
Apr.	6,821	195	88,592	95,608
May	6,960	191	92,531	99,682
June	6,720	173	88,049	94,942
July	6,132	185	74,283	80,600
Aug.	6,638	219	85,224	92,067
Sept.	6,195	163	78,934	85,292
Oct.	6,405	183	87,102	93,690
Nov.	6,498	150	81,984	88,632
Dec.	6,603	150	80,452	87,205
Ttl.	79,681	2,130	1,018,496	1,100,307
1957				
Jan.	6,607	172	86,431	93,210
Feb.	6,082	163	84,011	90,256
Mar.	6,714	196	88,257	95,167
Apr.	6,579	237	87,890	94,706

Average Custom Smelters' Scrap Buying Prices

(Cents per pound for carload lots del. consumers' works)

	No. 1 Copper Scrap	No. 2 Copper Scrap	Light Copper Scrap	Refinery Brass*
1955				
Av.	37.035	35.535	33.59	32.70
1956				
Apr.	41.65	40.15	37.65	38.15
May	36.06	34.56	32.06	32.50
June	33.32	31.82	29.32	29.03
July	32.69	31.19	28.69	28.98
Aug.	34.269	32.769	30.269	30.75
Sept.	33.56	32.06	29.81	29.92
Oct.	30.964	29.464	27.214	27.44
Nov.	30.51	29.01	26.76	27.50
Dec.	30.423	28.923	26.673	27.42
Av.	36.25	34.75	32.33	32.47
1957				
Jan.	29.30	27.80	25.55	26.30
Feb.	26.47	24.97	22.72	23.75
Mar.	26.58	25.08	22.83	24.52
Apr.	26.895	25.395	23.145	24.695
May	25.985	24.485	22.235	23.735
June	25.353	23.853	21.603	23.35

*Of dry content for material having a dry copper content in excess of 80%.

Brass Ingot Makers' Scrap Copper Buying Prices

(Average Prices)

(Cents per pound del. refinery for 60,000 lbs. of each grade)

	No. 1 Copper Scrap	No. 2 Copper Scrap	No. 1 Composition	Heavy Yellow Brass
1955				
Av.	36.63	35.02	29.905	22.35
1956				
Apr.	41.65	40.15	34.40	24.49
May	36.06	34.56	29.58	19.89
June	33.32	31.82	26.37	18.40
July	32.69	31.19	26.89	18.43
Aug.	34.269	32.769	29.833	20.463
Sept.	33.26	32.25	30.07	20.92
Oct.	30.687	29.187	28.058	19.538
Nov.	30.39	28.89	26.69	18.91
Dec.	30.195	28.695	27.50	18.96
Av.	36.17	34.67	30.483	21.34
1957				
Jan.	29.27	27.77	26.59	18.55
Feb.	26.47	24.97	23.50	16.65
Mar.	26.58	25.08	22.83	17.40
Apr.	26.895	25.395	23.50	17.50
May	25.985	24.485	23.144	17.144
June	25.353	23.853	22.83	16.65

United States Lead Statistics of Primary Refineries

(American Bureau of Metal Statistics)
(In tons of 2,000 lbs.)

	Stock At Beginning	Production: Primary & Secondary	Total Supply	Stock At End	Domestic Shipments
1953	43,560	533,883	577,443	81,152	488,437
1954	81,152	551,618	632,770	92,719	475,551
1955					
August	39,856	36,912	76,768	34,111	41,469
September	34,111	50,453	84,564	30,753	46,250
October	30,753	53,747	84,500	29,913	52,062
November	29,913	52,623	32,536	28,855	51,370
December	28,855	50,448	79,303	31,089	48,171
Total	.....	547,153	639,872	.....	531,339
1956					
January	31,089	51,306	82,395	32,469	49,746
February	32,469	49,475	81,944	41,450	39,411
March	41,450	54,174	95,624	52,089	39,344
April	53,089	52,976	105,065	53,958	44,986
May	53,958	47,961	101,919	50,460	40,703
June	50,460	47,367	97,827	45,951	41,458
July	45,951	48,479	94,430	49,134	36,483
August	49,134	48,404	97,538	39,304	48,404
September	39,304	53,530	92,834	40,542	47,519
October	40,542	54,815	95,357	42,314	45,254
November	42,314	50,744	93,058	37,192	47,349
December	37,192	54,063	91,254	41,181	44,191
Total	....	613,293	644,382	....	529,484
1957					
January	41,181	50,854	92,035	42,905	40,549
February	42,905	48,102	90,917	48,699	37,517
March	48,699	52,357	101,056	46,184	38,225
April	46,184	56,170	102,354	57,444	37,583
May	57,444	51,718	109,162	58,085	35,334

In instances where the figures are not in balance it is due to shipments to other than domestic consumers.

Industrial Classification of Domestic Lead Shipments

(American Bureau of Metal Statistics) (In tons of 2,000 lbs.)

	Cable	Amm.	Foil	Batt'y	Brass Making	Sundries	Jobbers	Unclassified
1951	70,149	32,099	2,068	75,837	5,583	48,248	3,550	259,155
1952	74,616	30,809	1,374	77,238	5,160	50,943	5,671	246,283
1953	76,283	34,415	2,136	80,389	5,716	55,936	6,390	227,222
1954								
Dec.	7,707	1,880	100	5,790	141	3,530	906	16,963
Total	75,412	30,246	2,811	66,088	5,192	57,369	9,170	229,264
1955								
Jan.	7,044	1,570	36	5,158	213	4,451	857	21,122
Feb.	5,869	3,200	348	6,758	289	4,796	1,013	24,373
Mar.	6,538	2,340	614	6,897	240	3,807	1,167	20,778
Apr.	5,909	2,625	201	6,533	463	5,178	1,234	22,735
May	6,145	2,950	251	8,127	321	4,435	1,145	22,756
June	6,623	950	50	6,833	290	5,175	1,293	23,816
July	2,313	150	307	4,365	100	3,763	946	14,603
Aug.	5,772	2,800	210	4,794	290	3,741	1,230	22,632
Sept.	6,552	2,295	415	7,794	354	4,711	1,149	22,980
Oct.	6,772	3,026	85	9,819	564	4,899	1,287	25,610
Nov.	6,606	2,433	70	13,875	387	3,795	874	23,330
Dec.	6,275	3,260	35	7,508	449	4,289	839	25,516
Total	72,418	27,599	2,622	88,461	3,960	52,994	13,034	270,251
1956								
Jan.	7,777	3,075	200	6,555	290	8,538	917	22,394
Feb.	5,974	2,435	384	5,983	275	3,592	871	19,897
Mar.	6,786	1,300	101	4,903	321	3,915	1,331	20,687
Apr.	6,744	2,950	310	4,839	260	3,522	1,376	24,985
May	6,490	2,825	...	5,027	131	3,513	964	21,753
June	8,502	2,150	...	4,167	186	3,645	1,021	21,787
July	3,497	904	....	5,007	80	2,859	1,453	22,683
Aug.	7,712	1,497	85	6,334	713	4,443	1,262	26,358
Sept.	6,354	1,850	135	6,303	230	5,038	1,339	26,270
Oct.	7,988	1,715	135	7,108	286	4,955	1,493	21,574
Nov.	6,096	2,351	....	8,556	226	5,573	792	23,755
Dec.	6,440	1,449	85	5,832	160	7,258	394	22,573
Total	80,360	24,501	1,435	70,614	3,158	56,851	13,213	274,716
1957								
Jan.	5,297	2,800	200	6,886	671	4,002	1,191	19,502
Feb.	5,103	1,450	350	6,549	508	4,820	625	18,112
Mar.	5,956	752	...	6,479	686	4,614	1,064	18,674
April	6,731	2,250	....	6,242	909	2,958	1,040	17,453
May	6,976	2,200	120	4,705	270	3,871	634	16,558

Lead Prices at New York

(Common Grade)
Monthly Average Prices
(Cents per pound)

	1954	1955	1956	1957
Jan.	13.26	15.00	16.16	16.00
Feb.	12.82	15.00	16.00	16.00
Mar.	12.94	15.00	16.00	16.00
Apr.	13.91	15.00	16.00	16.00
May	14.00	15.00	16.00	15.385
June	14.11	15.00	16.00	14.32
July	14.00	15.00	16.00	....
Aug.	14.06	15.00	16.00	....
Sept.	14.60	15.12	16.00	....
Oct.	14.975	15.50	16.00	....
Nov.	15.00	15.50	16.00	....
Dec.	15.00	15.56	16.00	....
Av.	14.06	15.14	16.013	....

Lead Sheet Prices

(To Jobbers, Full Sheets)
Monthly Average Prices
(Cents per pound)

	1954	1955	1956	1957
Jan.	18.26	20.00	21.66	21.50
Feb.	17.82	20.00	21.50	21.50
Mar.	17.94	20.00	21.50	21.50
Apr.	18.91	20.00	21.50	21.50
May	19.00	20.00	21.50	20.885
June	19.11	20.00	21.50	19.82
July	19.00	20.00	21.50	....
Aug.	19.06	20.00	21.50	....
Sept.	19.60	20.12	21.50	....
Oct.	19.975	20.50	21.50	....
Nov.	20.00	20.50	21.50	....
Dec.	20.00	20.56	21.50	....

Battery Shipments

The following table shows replacement battery shipments in the United States as compiled by the Business Information Division of Dun & Bradstreet, Inc., for the Association of American Battery Manufacturers:

(In thousands of units)

	1954	1955	1956	1957
Jan.	1,836	1,518	2,058	2,638
Feb.	1,461	1,691	1,340	1,960
Mar.	1,226	1,356	1,348	1,254
Apr.	1,180	1,315	1,368	1,178
May	1,429	1,614	1,761	1,761
June	1,883	1,842	1,807	....
July	2,350	2,078	2,178	....
Aug.	2,548	2,852	2,571	....
Sept.	2,800	3,120	2,711	....
Oct.	2,739	3,120	3,015	....
Nov.	2,475	2,697	2,592	....
Dec.	1,844	2,625	2,265	....
Total	23,771	25,828	25,014	....

Lead Stocks at Primary U. S. Smelters and Refiners

(American Bureau of Metal Statistics)

(In tons of 2,000 lbs.)

	In ore and matte and in process at smelters	— In base bullion (lead content) — At smelters & refineries	In transit to refineries	In process at refineries	Refined pig lead	Anti-monial lead	Total Stocks
1955							
May 1	59,686	17,468	3,496	25,373	43,207	11,749	160,979
June 1	**59,632**	**17,705**	**1,941**	**27,979**	**39,892**	**11,055**	**158,204**
July 1	58,182	14,707	2,941	30,579	34,432	10,233	151,074
Aug. 1	65,476	10,065	1,303	26,792	30,077	9,779	143,492
Sept. 1	75,057	17,183	3,744	29,660	26,859	7,252	159,755
Oct. 1	70,628	19,083	4,217	28,424	23,292	7,461	153,105
Nov. 1	71,257	20,682	4,276	28,596	21,828	8,085	154,724
Dec. 1	64,109	20,232	4,377	27,486	19,592	9,263	145,059
1956							
Jan. 1	71,812	16,532	3,764	27,625	21,196	9,893	150,822
Feb. 1	70,690	19,082	1,764	25,632	24,080	8,389	149,637
Mar. 1	71,023	16,406	2,583	27,519	32,355	9,095	158,981
Apr. 1	72,358	15,655	2,152	28,065	41,800	10,289	170,319
May 1	**74,837**	**15,500**	**2,718**	**24,181**	**43,268**	**10,690**	**171,194**
June 1	78,987	15,477	2,475	26,682	39,558	10,902	174,081
July 1	81,796	15,837	4,423	28,505	36,499	9,452	176,512
Aug. 1	76,985	16,856	3,516	29 603	38,210	10,924	176,094
Sept. 1	81,634	18,529	2,874	29,991	29,230	10,074	172,332
Oct. 1	77,787	15,991	4,413	28,083	29,361	11,181	166,816
Nov. 1	78,253	12,022	3,083	25,783	30,932	11,382	161,485
Dec. 1	82,197	9,095	4,132	25,627	25,360	11,832	158,243
1957							
Jan. 1	77,918	12,222	2,846	25,092	29,435	11,746	159,249
Feb. 1	80,451	10,636	4,061	25,827	32,418	10,487	163,880
Mar. 1	81,274	11,880	4,394	25,728	38,479	10,220	171,975
Apr. 1	82,461	14,598	3,593	25,401	36,390	9,794	172,237
May 1	81,061	17,035	2,705	20,890	48,053	9,391	179,135
June 1	81,364	11,585	3,071	21,002	48,286	9,799	175,107

Receipts of Lead in Ore and Scrap

By U. S. Smelters (a)

(American Bureau of Metal Statistics) (In tons of 2,000 lbs.)

	Receipts of lead in ore			Receipts of lead in scrap etc. (b)	Total receipts in ore, & scrap
	United States	Foreign	Total		
1952 Total	405,990	98,276	504,266	41,845	546,111
1953 Total	351,183	155,788	506,971	42,994	549,965
1954 Total	336,291	158,081	494,372	49,864	544,236
1955					
May	28,511	13,377	41,888	4,879	48,767
June	28,273	14,667	42,940	4,509	47,449
July	23,027	3,826	26,853	649	27,502
August	30,249	11,859	42,108	3,942	46,050
September	29,377	14,881	44,258	3,623	47,881
October	30,073	20,845	50,918	5,655	56,573
November	27,736	13,022	40,758	3,802	44,560
December	29,363	24,136	53,499	3,150	56,649
Total	341,595	172,966	514,561	42,996	557,557
1956					
January	27,184	15,704	42,888	6,346	49,234
February	28,569	16,528	45,097	4,577	49,674
March	31,568	17,904	49,472	3,989	53,461
April	31,786	15,224	47,010	4,252	51,262
May	32,715	18,476	51,191	4,711	55,902
June	31,546	16,251	47,797	4,541	52,338
July	29,964	13,476	43,440	3,207	46,647
August	31,112	20,726	51,838	5,885	57,723
September	28,731	16,276	45,007	3,351	48,358
October	33,614	12,350	45,964	5,439	51,403
November	30,553	14,308	44,861	5,141	50,002
December	31,154	15,095	46,252	4,536	50,788
Total	368,499	192,318	560,817	55,925	616,792
1957					
January	30,632	19,961	50,593	4,471	55,064
February	31,410	15,059	46,469	4,564	51,033
March	33,445	18,813	52,258	3,058	55,316
April	31,343	13,042	44,385	2,848	47,233
May	32,138	12,324	44,462	3,431	47,893

(a) Receipts of lead in ore are computed on the basis of recoverable lead. Owing to the estimational factor in this, which is probably on the low side, and also to the possibility that some lead receipts may escape attention, these monthly totals probably underrun the actual production of pig lead. (b) inclusive only of scrap smelted in connection with ore, plus some scrap received by primary refiners.

N. Y. Lead Price Changes

(Effective Date)

1949		Feb. 2	13.50
Nov. 16	12.50	Mar. 4	13.90
Nov. 21	12.00	Mar. 10	13.50
1950		Apr. 7	13.00
Mar. 9	11.00	Apr. 16	12.50
Mar. 14	10.50	Apr. 21	12.00
Apr. 20	10.75	Apr. 29	12.50
Apr. 26	11.00	May 18	12.75
May 4	11.25	May 19	13.00
May 10	11.50	May 26	13.15
May 11	12.00	June 11	13.50
June 23	11.50	July 20	13.75
1951		July 23	14.00
June 28	11.00	Sept. 16	13.50
July 12	11.50	1954	
July 13	12.00	Jan. 18	13.00
Aug. 15	13.00	Feb. 18	12.50
Aug. 21	14.00	Mar. 9	12.75
Sept. 1	15.00	Mar. 10	13.00
Sept. 8	16.00	Mar. 26	13.25
Oct. 2	**19.00	Mar. 29	13.50
Oct. 31	17.00	Apr. 1	13.75
1952		Apr. 12	14.00
Apr. 29	18.00	June 2	14.25
May 2	17.00	June 15	14.00
May 12	15.00	Aug. 25	14.25
June 23	15.50	Sept. 7	14.50
June 24	16.00	Sept. 15	14.75
Oct. 7	15.00	Oct. 4	14.875
Oct. 14	14.00	Oct. 5	15.00
Oct. 22	13.50	1955	
Nov. 3	14.00	Oct. 23	15.00-15.50
Nov. 10	14.25	Oct. 26	15.50
Nov. 11	14.50	Dec. 29	16.00
Nov. 20	14.25	1956	
Nov. 24	14.00	Jan. 4	16.50
Dec. 22	14.25	Jan. 13	16.00
Dec. 29	14.50	1957	
Dec. 31	14.75	May 9	15.50
1953		May 16	15.00
Jan. 7	14.50	June 11	14.00
Jan. 12	14.00		

**OPS Ceiling.

Antimonial Lead Stocks at Primary Refineries

(A.B.M.S.)

(In tons of 2,000 lbs.)

End of:	1954	1955	1956	1957
Jan.	14,691	14,902	8,389	10,487
Feb.	14,798	12,204	9,095	10,220
Mar.	11,985	12,385	10,289	9,794
Apr.	11,977	11,740	10,690	9,391
May	11,882	11,055	10,902	8,799
June	9,798	10,233	9,452	....
July	12,210	9,779	10,924	....
Aug.	12,279	7,252	10,074	....
Sept.	14,168	7,461	11,181	....
Oct.	14,846	8,685	11,382	....
Nov.	14,573	9,263	11,832	....
Dec.	14,789	9,893	11,746	....

Antimonial Lead Production by Primary Refineries

(A.B.M.S.)

(In tons of 2,000 lbs.)

End of:	1954	1955	1956	1957
Jan.	3,769	4,529	5,045	5,113
Feb.	4,257	4,777	5,888	5,468
Mar.	4,475	6,202	5,526	5,091
Apr.	4,470	5,343	5,818	6,183
May	4,373	4,737	5,405	6,978
June	3,796	4,792	4,456	....
July	5,901	1,153	3,853	....
Aug.	6,455	2,946	5,343	....
Sept.	5,869	6,650	6,709	....
Oct.	5,532	8,016	5,378	....
Nov.	5,364	7,985	6,993	....
Dec.	5,255	6,907	5,766	....
Total	59,875	64,037	66,180	....

U. S. Lead Consumption

(Bureau of Mines — In Short Tons)

	1957		
	Jan.-Apr.	Mar.	Apr.
Metal Products:			
Ammunition	14,039	3,794	4,089
Bearing metals	8,496	1,989	2,054
Brass and bronze	8,394	1,930	1,978
Cable covering	43,613	11,090	11,324
Caulking lead	19,911	4,786	5,901
Casting metals	4,184	1,193	1,187
Collapsible tubes	3,101	801	854
Foil	1,640	540	478
Pipes, traps & bends	7,768	1,988	1,966
Sheet lead	8,768	2,165	2,085
Solder	24,156	5,940	5,538
Storage battery grids, posts, etc.	62,331	15,638	13,666
Storage battery oxides	62,874	14,959	13,972
Terne metal	433	170	49
Type metal	8,657	2,343	2,102
Total	278,365	69,326	67,243
Pigments:			
White lead	4,847	1,295	1,474
Red lead & litharge	27,282	7,101	6,653
Pigment colors	4,009	891	1,067
Other*	2,062	677	421
Total	38,200	9,964	9,615
Chemicals:			
Tetraethyl lead	56,319	14,031	14,360
Misc. chemicals	1,552	569	207
Total	57,871	14,600	14,567
Miscellaneous uses:			
Annealing	1,652	413	453
Galvanizing	499	97	136
Lead plating	105	10	34
Weights & ballast	1,775	462	508
Total	4,031	982	1,131
Other uses unclassified	5,624	1,498	1,319
total reported	†384,091	†96,370	†93,875
Estimated unreported consumption	4,000	1,000	1,000
Grand total	†388,100	†97,400	†94,900
Daily average‡	3,234	3,142	3,163

* Includes lead content of leaded zinc oxide production.

† Includes lead content of scrap used directly in fabricated products.

‡ Based on number of days in month without adjustment for Sundays or holidays.

U. K. Lead Consumption

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 pounds)

	1955	1956	1957
Jan.	29,062	31,012	29,657
Feb.	28,926	30,125	29,219
Mar.	33,225	30,099	29,441
Apr.	28,656	28,186	27,246
May	31,092	29,752	31,574
June	32,627	31,501	....
July	26,994	26,963	....
Aug.	26,954	25,077	....
Sept.	34,291	30,274	....
Oct.	34,121	32,057	....
Nov.	34,820	32,036	....
Dec.	29,689	25,963	....
Total	370,794	353,045	....

American Antimony

Monthly Average Prices
In bulk, f.o.b. Laredo
(Cents per lb. in ton lots)

	1954	1955	1956	1957
Jan.	28.50	28.50	33.00	33.00
Feb.	28.50	28.50	33.00	33.00
Mar.	28.50	28.50	33.00	33.00
Apr.	28.50	28.50	33.00	33.00
May	28.50	28.50	33.00	33.00
June	28.50	28.50	33.00	33.00
July	28.50	28.50	33.00	....
Aug.	28.50	30.66	33.00	....
Sept.	28.50	33.00	33.00	....
Oct.	28.50	33.00	33.00	....
Nov.	28.50	33.00	33.00	....
Dec.	28.50	33.00	33.00	....
Aver.	28.50	30.18	33.00	....

Lead Imports and Exports By Principal Countries

(A. B. M. S.)

Reported in pigs, bars, etc.; metric tons except where otherwise noted.

	1957		
	Feb.	Mar.	Apr.
IMPORTS			
U. S.† (s.t.)	22,423	20,784	25,069
Canada (s.t.)	101	...	...
Denmark	454	407	813
France	4,544	3,267	4,139
Italy‡	812	...	...
Netherlands	3,729	3,620	3,573
Norway	782	588	...
Sweden	984	995	...
Switzerland	1,313	1,468	1,048
U. K. (l.t.)	10,062	10,931	20,806
India* (l.t.)	951	...	...
EXPORTS			
U. S.† (s.t.)	1,420	868	445
Canada (s.t.)	6,632	7,044	7,314
Denmark	174	126	123
France	20	518	272
Netherlands	591	670	697
Northern Rhodesia* (l.t.)	1,061	706	...
Australia* (l.t.)	15,650	...	...

† Refined.
‡ Includes lead alloys.
* British Bureau of Non-Ferrous Metal Statistics.

French Lead Imports

(A.B.M.S.)

(In metric tons)

	1957		
	Mar.	Apr.	May
Ore (gross weight)	7,973	8,391	13,428
Italy	...	...	438
Algeria	632	...	...
Morocco	6,318	8,391	12,990
Fr. Equat. Africa	1,000	...	...
Tunisia	1	...	...
Madagascar	22	...	...
Pig lead	3,267	4,139	4,165
Belgium	581	254	51
Germany (W.)	575	295	325
U. Kingdom	254	507	...
Algeria	...	3	2
Morocco	715	1,023	1,867
Tunisia	1,142	1,997	1,919
Other countries	...	60	1
Antimonial lead	574	7	503

U. K. Lead Imports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	1957		
	Mar.	Apr.	May
(Gross Weight)			
Lead and lead alloys	10,931	20,806	6,385
Australia	6,984	15,174	2,698
Canada	2,526	3,300	1,775
Belgium	750	550	399
Yugoslavia	370	250	160
Peru	50	600	799
Other countries	251	932	614

Consumers' Lead Stocks, Receipts and Consumption

(Bureau of Mines — In Short Tons)

	Stocks Mar. 31, 1957	Net Receipts In Apr.	Consumed In Apr.	Stocks Apr. 30, 1957
Soft lead	72,508	53,450	59,398	66,560
Antimonial lead	37,647	24,418	25,393	36,672
Lead in alloys	7,332	4,473	4,078	7,727
Lead in copper-base scrap	1,888	1,602	1,496	1,994
Total	119,375	83,943	*90,365	112,953

* Excludes 3,116 tons of lead which went directly from scrap to fabricated products and 394 tons of lead contained in leaded zinc oxide production.

Consumption of Lead by Class of Product

(Bureau of Mines — In Short Tons)

APRIL

	Soft lead	Antimonial lead	Lead in alloys	Lead in Copper-base scrap	Total
Metal products	34,052	24,767	3,885	1,496	64,200
Pigments	9,417	8	190	...	9,615
Chemicals	14,170	3	...	...	14,173
Miscellaneous	705	353	...	...	1,058
Unclassified	1,054	262	3	...	1,319
Total	59,398	25,393	4,078	1,496	*90,365

* Excludes 3,116 tons of lead which went directly from scrap to fabricated products and 394 tons of lead contained in leaded zinc oxide production.

Domestic Zinc Statistics

American Zinc Institute

Commencing with January, 1948, all regularly operating U. S. primary and secondary smelters are included in this report. Production from foreign ores also is included.

(Tons of 2,000 lbs.)

	Stock Beginning	Production	Shipments: Domestic	Shipments: Export & Drawback	Shipments: Gov't Acc't	Shipments: Total	Stock at End	Unfilled Orders at End	Daily Avg. Prod.
1950 Tl.	94,221	910,354	849,246	18,189	128,256	995,691	8,884	74,795	2,494
1950 Mo. Avg.		75,863	70,770	1,516	10,688	82,974			
1951 Tl.	8,884	931,833	836,800	32,067	39,949	918,816	21,901	50,509	2,558
1951 Mo. Avg.		77,653	69,733	3,506	3,329	76,568			
1952 Tl.	21,901	961,430	803,343	56,202	36,626	896,171	87,160	45,264	2,627
1952 Mo. Avg.		80,119	66,945	4,683	3,052	74,681			
1953 Tl.	180,843	971,191	818,850	16,326	42,332	877,508	180,843	35,466	2,661
1953 Mo. Avg.		80,933	68,238	1,361	3,528	73,126			
1954									
Total	124,277	868,242	787,922	27,929	108,957	924,808	124,077	45,862	....
Monthly Avg.		72,353	65,660	2,327	9,080	77,067	.....	.....	2,379
1955									
Apr.	90,837	83,786	89,589	1,967	5,488	100,044	74,597	65,127	2,793
May	74,579	86,177	83,336	3,802	10,434	97,572	63,184	70,087	2,780
June	63,184	84,458	92,212	1,492	5,235	99,039	48,603	57,221	2,815
July	48,603	84,400	76,812	862	4,039	81,713	51,290	64,056	2,722
Aug.	51,290	84,874	87,042	885	2,153	90,080	46,084	73,632	2,738
Sept.	46,084	83,443	83,664	1,274	2,427	87,365	42,167	52,278	2,781
Oct.	42,167	89,449	85,770	36	1,942	87,748	43,868	61,746	2,886
Nov.	43,868	86,616	91,585	220	1,561	93,426	36,058	64,580	2,921
Dec.	36,058	92,578	87,010	634	1,963	89,657	40,979	72,908	2,986
Total	40,979	1 031,018	1,007,619	19,496	87,200	1,114,316	40,979	72,908	....
Monthly Avg.		85,918	83,968	1,625	7,267	92,860			2,825
1956									
Jan.	40,979	90,313	87,723	1,084	1,155	89,962	41,330	60,717	2,913
Feb.	41,330	86,329	84,727	317	2,782	87,826	39,833	45,255	2,977
Mar.	39,833	91,690	84,204	460	6,821	91,485	40,038	53,070	2,953
Apr.	40,038	88,664	74,789	1,437	4,570	80,795	47,907	46,106	2,955
May	47,907	81,288	69,685	287	10,196	80,168	49,577	34,008	2,620
June	49,577	78,321	68,048	539	15,085	83,672	39,226	45,921	2,611
July	39,226	83,080	84,219	811	14,501	49,531	102,775	53,559	2,690
Aug.	102,775	89,549	70,707	1,235	16,075	88,017	104,307	55,769	2,889
Sept.	104,307	90,235	73,142	934	18,301	92,377	102,165	64,450	3,008
Oct.	102,165	93,493	84,991	465	21,392	106,848	88,810	53,425	3,016
Nov.	88,810	91,808	82,478	787	27,168	110,433	70,185	45,866	3,060
Dec.	70,185	98,234	80,772	671	18,354	99,797	68,622	34,913	3,169
Total		1,062,954	869,270	9,027	157,014	1,035,311			
Monthly Avg.		88,850	72,439	752	13,085	86,275			2,904
1957									
Jan.	68,622	93,452	67,273	450	15,377	83,100	78,974	42,322	3,014
Feb.	78,974	88,078	67,441	1,527	10,905	80,163	86,889	56,421	3,142
Mar.	87,040	96,924	67,097	1,558	25,608	94,607	89,357	56,818	3,127
Apr.	89,357	96,506	55,000	1,411	23,921	80,332	105,531	42,102	3,217
May	105,531	96,855	60,729	2,106	26,858	89,683	112,693	31,539	3,124
June	112,693	80,719	54,275	1,358	14,324	68,957	133,455	28,822	3,024

U. S. Consumption of Slab Zinc

Bureau of Mines

By Industries (Short Tons)

	Galvanizers	Die Casters	Brass products	Rolled zinc	Zinc oxide & other	Total
1949 Total	**348,544**	**197,387**	**84,257**	**55,100**	**17,643**	**702,931**
1950 Total	**434,094**	**281,385**	**136,451**	**67,779**	**27,656**	**947,365**
1951 Total	**386,373**	**266,442**	**141,456**	**64,000**	**28,788**	**887,009**
1952 Total	**375,563**	**236,022**	**155,311**	**51,508**	**30,885**	**849,289**
1953 Total	403,162	305,346	177,301	53 784	38,037	977,636
1954						
Total	**398,599**	**286,817**	**107,293**	**45,979**	**33,342**	**876,130**
1955						
April	**36,136**	**36,628**	**11,034**	**3,833**	**3,181**	**90,812**
May	**37,471**	**36,926**	**12,404**	**4,203**	**3,409**	**94,413**
June	**37,874**	**32,821**	**13,305**	**5,012**	**3,227**	**92,239**
July	**33,433**	**23,910**	**7,017**	**2,832**	**2,897**	**70,589**
August	**38,317**	**30,168**	**10,244**	**5,431**	**3,027**	**87,687**
September	**39,181**	**31,804**	**12,672**	**4,185**	**3,507**	**91,849**
October	**40,030**	**35,136**	**13,961**	**4,714**	**3,596**	**97,940**
November	**38,116**	**38,616**	**13,455**	**3,952**	**3,636**	**98,275**
December	**37,249**	**36,982**	**15,003**	**3,900**	**3,621**	**96,755**
Total	439,694	404.790	144,816	50,363	39,302	1,081,468
1956						
January	**38,148**	**36,554**	**13,097**	**4,442**	**3,665**	**95,906**
February	37,702	31,274	12.678	3,883	3,325	88,862
March	38,662	31,332	12,889	4,433	3,566	90,882
April	**37,092**	**29,226**	**12,635**	**4,010**	**3,359**	**86,322**
May	**38,064**	**26,003**	**12,218**	**3,431**	**1,260**	**80,976**
June	**37,005**	**21,790**	**8,351**	**3,454**	**1,315**	**71,915**
July	12,960	21.425	5.193	3.187	2,883	45 648
August	**33,840**	**26,514**	**8,420**	**4,222**	**2,959**	**76,255**
September	**37,313**	**26,998**	**8,370**	**3,397**	**3,280**	**79,358**
October	40,875	34 985	10 164	4.158	3,695	93,877
November	36,767	32,812	9,581	3,625	3,539	87,224
December	32,790	33,238	8,799	3,140	3,405	82,272
Total	421,218	352,451	122,395	45,382	36,251	988,097
1957						
January	34,337	37,517	10,800	3,502	3,434	90,490
February	31,686	32,520	9,156	3,284	3,206	80,752
March	30,747	30,946	8,860	3,553	3,378	78,384
April	30,631	29,166	9,491	4,001	3,300	77,489

Prime Western Zinc Prices

(Cents per pound)

(In tons of 2,240 pounds)

	1954	1955	1956	1957
Jan.	9.76	11.50	13.46	13.50
Feb.	9.375	11.50	13.50	13.50
Mar.	9.66	11.50	13.50	13.50
Apr.	10.25	11.93	13.50	13.50
May	10.29	12.00	13.50	11.933
June	10.96	12.25	13.50	10.84
July	11.00	12.50	13.50	....
Aug.	11.00	12.50	13.50	....
Sept.	11.44	12.96	13.50	....
Oct.	11.50	13.02	13.50	....
Nov.	11.50	13.00	13.50	....
Dec.	11.50	13.00	13.50	....
Av.	10.69	12.305	13.497	....

High Grade Zinc Prices

(Delivered)

N. Y. Monthly Averages

(Cents per pound)

	1954	1955	1956	1957
Jan.	11.11	12.85	14.81	14.85
Feb.	10.725	12.85	14.85	14.85
Mar.	11.01	12.85	14.85	14.85
Apr.	11.60	13.28	14.85	14.85
May	11.64	13.35	14.85	13.283
June	12.31	13.60	14.85	12.19
July	12.35	13.85	14.85	....
Aug.	12.35	13.85	14.85	....
Sept.	12.79	14.31	14.85	....
Oct.	12.85	14.37	14.85	....
Nov.	12.85	14.35	14.85	....
Dec.	12.85	14.35	14.85	....
Av.	12.04	13.655	14.847	....

U. K. Zinc Consumption

British Bureau of Non-Ferrous Metal Statistics

(In Tons of 2,240 Pounds)

	1955	1956	1957
Jan.	29,192	29,779	28,485
Feb.	28,814	29,568	26,276
Mar.	33,451	28,650	27,049
Apr.	27,741	25,348	24,247
May	29,237	27,922	27,922
June	31,467	26,650	.....
July	23,695	23,826	.....
Aug.	23,261	18,867	.....
Sept.	30,080	25,470	.....
Oct.	29,460	27,784	.....
Nov.	31,516	27,713	.....
Dec.	28,683	24,134	.....
Total	346,597	315,711	.....

Mine Production of Zinc in United States

(U. S. Bureau of Mines)

(In short tons)

	Eastern States	Central States	Western States	Total U.S.*
1952				
Total	185,939	94,410	385,652	666,001
1953				
Total	183,612	57,300	293,818	534,730
1954				
Total	166,487	63,100	234,942	464,539
1955				
Dec.	12,644	5,250	21,721	39,615
Total	163,230	73,630	277,811	514,671
1956				
Jan.	13,830	5,263	22,073	41,166
Feb.	13,975	5,236	23,506	42,717
Mar.	15,058	5,740	26,975	47,773
Apr.	14,172	5,098	25,618	44,888
May	14,834	5,557	26,840	47,232
June	13,730	5,228	26,135	45,093
July	13,028	5,364	24,571	42,963
Aug.	14,559	5,425	25,453	45,437
Sept.	13,567	4,628	23,785	41,980
Oct.	17,439	4,815	26,607	48,861
Nov.	15,604	4,566	25,279	45,449
Dec.	15,513	4,160	24,411	44,084
Total	175,310	61,080	301,253	537,643
1957				
Jan.	18,586	4,916	25,864	49,186
Feb.	15,989	4,658	25,200	45,847
Mar.	17,834	5,156	27,430	50,420
Apr.	18,245	4,912	27,900	51,057

*Includes Alaskan output in some months.

Mine Production of Lead in United States

(U. S. Bureau of Mines)

(In short tons)

	Eastern States	Central States	Western States	Total U.S.*
1952				
Ttl.	11,252	150,302	228,607	390,161
1953				
Ttl.	9,970	136,650	188,776	335,412
1954				
Ttl.	8,608	138,940	169,804	317,352
1955				
Nov.	762	11,731	13,482	25,975
Dec.	771	13,628	13,403	27,802
Ttl.	10,379	145,640	177,409	333,409
1956				
Jan.	895	11,633	14,294	26,822
Feb.	1,141	12,100	15,009	28,250
Mar.	1,202	13,232	16,516	30,950
Apr.	1,028	11,948	16,729	29,705
May	1,091	12,497	16,387	29,975
June	897	11,492	17,092	29,481
July	749	11,459	15,761	27,969
Aug.	879	12,760	16,991	30,630
Sept.	868	10,632	15,915	27,415
Oct.	879	12,698	17,843	31,520
Nov.	862	10,779	16,862	28,503
Dec.	804	10,670	15,635	27,109
Ttl.	11,395	141,900	195,034	348,329
1957				
Jan.	1,002	12,513	16,714	30,229
Feb.	942	11,730	16,464	29,136
Mar.	968	11,875	18,022	30,865
Apr.	1,053	12,695	17,800	31,548

*Includes Alaskan output in some months.

Mine Production of Gold in United States

(U. S. Bureau of Mines)

(In fine ounces)

	Eastern States	Western States	Alaska*	Total
1952				
Ttl.	1,948	1,650,660	233,428	1,886,036
1953				
Ttl.	1,529	1,689,668	273,479	1,964,676
1954				
Ttl.	1,731	1,577,216	252,794	1,831,741
1955				
Ttl.	2,026	1,634,625	247,535	1,884,186
1956				
Jan.	121	131,872	7	132,000
Feb.	154	130,368	10	130,532
Mar.	198	134,421	55	134,674
Apr.	156	136,227	522	136,911
May	175	141,240	5,085	146,494
June	199	139,541	13,112	152,852
July	45	126,628	32,515	159,188
Aug.	178	136,812	45,529	182,519
Sept.	194	137,561	40,564	178,319
Oct.	194	130,665	35,901	166,760
Nov.	206	133,456	25,506	159,162
Dec.	178	129,139	5,506	134,817
Ttl.	1,998	1,607,930	204,300	1,814,228
1957				
Jan.	183	131,954	1,134	133,271
Feb.	153	118,122	1,197	119,472

* Alaska totals based on mint and smelter receipts.

Mine Production of Recoverable Silver in United States

(U. S. Bureau of Mines)

(In Fine Ounces)

	Eastern States	Missouri	Western States	Alaska*	Total
1953 Total	158,707	223,500	36,354,685	39,111	36,776,003
1954 Total	142,180	283,600	36,121,368	35,140	36,582,288
1955 Total	159,038	438,000	36,103,723	33,804	36,734,565
1956					
February	47,071	32,430	2,918,233	3	3,060,737
March	51,867	34,370	3,095,221	8	3,181,466
April	43,270	32,050	3,196,813	61	3,272,194
May	46,770	33,300	3,063,179	770	3,144,019
June	46,753	30,610	3,097,297	1,595	3,176,255
July	51,664	31,160	2,697,372	4,171	2,874,367
August	45,914	35,180	3,239,671	6,333	3,327,098
September	46,305	28,700	2,925,332	5,666	3,006,003
October	42,808	34,510	3,288,177	4,942	3,370,437
November	46,379	29,000	3,009,312	2,400	3,087,091
December	45,528	25,000	2,759,108	750	2,830,386
Total	553,982	377,200	36,169,267	26,700	37,127,149
1957					
January	12,538	19,400	3,156,768	175	3,188,881
February	11,433	18,660	3,045,754	345	3,076,212
March	9,845	18,700	3,228,787	141	3,257,473

*Alaska totals based on mint and smelter receipts.

U. S. Silver Production*

(A.B.M.S.)

(In thousands of ounces; commercial bars, 0.999 fine, and other refined forms)

	Dom.†	For.	Total
1952 Total	40,245	36,653	76,898
1953 Total	34,697	37,764	72,461
1954 Total	38,059	39,422	77,481
1955			
October	2,432	3,889	6,321
November	3,087	2,775	5,862
December	3,180	3,652	6,832
Total	33,101	32,780	65,881
1956			
January	3,249	4,159	7,408
February	3,615	4,033	7,648
March	3,790	3,550	7,340
April	2,898	3,191	6,089
May	2,905	3,709	6,614
June	2,501	2,248	4,749
July	3,828	2,838	6,666
August	3,035	3,818	6,853
September	2,828	3,002	5,830
October	3,454	3,125	6,579
November	2,886	2,685	5,571
December	3,168	3,802	6,970
Total	38,157	40,160	78,317
1957			
January	2,997	2,877	5,874
February	2,925	2,876	5,801
March	3,360	3,166	6,526

* The separation between silver of foreign and domestic origin on the basis of refined bars and other refined forms is only approximate.

† Includes purchases of crude silver by the U. S. Mint.

Production of Primary Aluminum in the U. S

(U. S. Bureau of Mines)

(In short tons)

	1950	1951	1952	1953	1954	1955	1956	1957
Jan.	50,023	67,954	76,934	89,895	116,247	128,203	140,394	147,029
Feb.	54,493	62,740	72,374	92,649	110,483	116,236	132,763	119,059
Mar.	58,747	70,022	77,069	104,460	122,339	130,272	145,895	135,706
Apr.	58,024	67,701	76,880	102,071	120,434	126,394	144,726	138,728
May	51,929	67,720	80,803	105,464	125,138	131,128	150,800	144,789
June	60,400	67,454	77,476	104,152	120,758	127,634	145,726	
July	63,518	72,698	78,368	109,285	126,161	132,669	151,624	
Aug	63,006	73,816	85,175	110,545	125,296	133,551	92,406	
Sept.	54,449	69,429	76,882	109,333	120,332	130,606	132,316	
Oct.	62,915	72,647	77,312	108,219	125,089	134,655	149,125	
Nov.	62,276	72,246	74,639	105,636	121,252	133,689	145,081	
Dec.	65,897	72,454	83,419	110,291	127,056	140,748	148,391	
Total	718,622	826,881	937,330	1,252,013	1,460,565	1,565,721	1,679,427	

Average Silver Prices

(Cents per fine ounce)

	1954	1955	1956	1957
Jan.	85.25	85.25	90.357	91.375
Feb.	85.25	85.25	90.90	91.375
Mar.	85.25	85.25	91.138	91.375
Apr.	85.25	87.08	90.875	91.375
May	85.25	88.928	90.75	91.307
June	85.25	89.71	90.46	90.456
July	85.25	90.49	90.14	
Aug.	85.25	90.75	90.614	
Sept.	85.25	90.795	90.75	
Oct.	85.25	91.794	90.722	
Nov.	85.25	91.46	91.375	
Dec.	85.25	90.45	91.375	
Ave.	85.25	89.116	90.79	

Note — The averages are based on the price of refined bullion imported on or after August 31, 1943.

U. S. Copper Imports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1957		
	Feb.	Mar.	Apr.
Ore matte & regulus (cont.)	10,131	9,737	13,265
Canada	1,383	2,953	2,778
Mexico	594	425	866
Cuba	1,184	2,108	182
Agentina	191	....	....
Bolivia	472	467	....
Chile	1,131	1,598	3,428
Peru	1,249	958	1,339
Philippines	3,656	3	2,223
U. of S. Africa	....	1,097	2,392
Australia	271	127	55
Other countries	....	1	2
Blister copper (content)	18,217	29,081	32,558
Mexico	1,519	3,539	5,829
Chile	14,466	18,161	25,434
Peru	....	1,453	549
N. Rhodesia	....	5,186	746
U. of S. Africa	745	....	....
Australia	1,487	742	....
Refined cathodes and shapes	14,190	16,155	11,815
Canada	10,009	6,904	7,486
Chile	649	794	1,909
Peru	1,428	500	599
Belgium	....	448	....
Belg. Congo	1,700	1,848	1,549
N. Rhodesia	404	5,661	272
Total Imports:			
Crude & refined	42,538	54,973	57,638
Old and scrap (content)	258	182	240
Composition metal (content)	27	36	12
Brass scrap & old (cu. cont.)	292	184	333

U. S. Lead Imports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1957		
	Feb.	Mar.	Apr.
Ore, matte, etc. (content)	11,104	18,045	16,786
Canada	1,423	2,596	1,782
Mexico	327	170	531
Guatemala	1,014	571	793
Honduras	176	168	80
Bolivia	602	2,691	....
Chile	....	....	29
Peru	3,259	4,680	4,768
U. of S. Africa	....	3,519	8,049
Australia	4,238	3,522	708
Philippines	....	82	....
Other countries	65	46	46
Pigs and bars	22,423	20,784	25,069
Canada	3,648	2,632	3,711
Mexico	4,824	9,241	4,886
Peru	1,816	2,500	1,814
Denmark	56	....	4
Spain	772	55	....
Yugoslavia	4,852	1,533	431
Morocco	....	....	4,304
Australia	6,455	4,823	9,919
Total Imports:			
Ore, base bullion, refined	33,527	38,829	41,855
Lead scrap, dross, etc. (cont.)	831	449	421
Antimonial lead & typemetal	416	629	280
Lead content thereof	398	585	248

U. S. Copper Exports

(A.B.M.S.) (Bureau of the Census)
(In tons of 2,000 lbs.)

	1957		
	Feb.	Mar.	Apr.
Ore, conc., matte, and other unrefined (cont.)	1,407	1,972	1,340
Refined ingots, bars, etc.†	29,769	41,376	32,315
Canada	193	128	135
Brazil	471	1,067	1,306
Uruguay	...	...	220
Belgium	...	21	...
Denmark	...	560	...
France	2,937	6,213	6,722
Germany (W.)	1,646	6,431	4,306
Italy	3,282	2,830	3,563
Netherlands	616	592	2,272
Norway	...	497	700
Sweden	...	224	392
Switzerland	811	3,240	1,138
U. Kingdom	7,805	10,608	6,702
Yugoslavia	...	...	55
India	168	335	112
Japan	11,618	8,088	4,320
U. of S. Africa	49	226	74
Australia	...	280	280
Other countries	173	36	18
Total Exports:			
Crude & refined	31,176	43,348	33,655
Pipes and tubes	106	97	70
Plates and sheets	11	17	21
Rods	60	117	236
Brush-copper, castings, rolls segments (finished forms) n.e.s.	20	20	22
Wire, bare	936	1,402	1,004
Building wire and cable‡	227	455	286
Weatherproof wire‡	38	77	71
Insulated copper wire n.e.s.	783	1,283	1,049

U. S. Copper Scrap Exports

(A.B.M.S.) (Bureau of the Census)
(In tons of 2,000 lbs.)

	1957		
	Feb.	Mar.	Apr.
Copper scrap, unalloyed (new and old)†	4,682	5,393	9,137
Canada	704	950	579
Belgium	...	...	27
France	138	619	552
Germany (W.)	1,087	1,275	2,328
Netherlands	...	28	55
Sweden	...	...	164
Switzerland	14	..	55
U. Kingdom	...	.	385
India	...	27	165
Japan	2,675	2,398	4,677
Other countries	64	96	150
Copper-base scrap, alloyed‡ (new & old)	6,523	10,315	8,579
Canada	4	30	...
Belgium	110	181	138
France	111	435	461
Germany (W.)	1,404	2,832	2,784
Italy	1,260	1,331	909
Netherlands	...	129	104
Portugal	...	119	39
Spain	...	11	6
Switzerland	22	30	28
U. Kingdom	253	65	182
India	305	518	535
Japan	3,017	4,551	3,333
Hong Kong	27	82	60
Other countries	10	1	...

† Ash, brass mill, clippings, dross, flue dust, residues, scale, skimmings, wire scrap.
‡ Copper-base alloys, including brass and bronze — Ashes, clippings for remanufacture, cupro-nickel scrap, cupro-nickel trimmings, nickel silver scrap, phosphor bronze, phosphor copper, skimmings, turnings, round.

U. S. Zinc Exports

(A.B.M.S.) (Bureau of the Census)
(In tons of 2,000 lbs.)

	1957		
	Feb.	Mar.	Apr.
Slabs, blocks, etc.	503	987	1,200
Mexico	...	...	74
Argentina	6	...	...
Belgium	280	560	112
Germany (W.)	..	...	84
Netherlands	...	...	224
U. Kingdom	196	336	672
Korea	21	64	32
Other countries	...	27	2
Total Exports:			
Ore, conc., slabs, block	503	987	1,200
Scrap: Ashes, dross and skim.	471	706	373
Rolled in sheets, plates & strips†	248	334	238
Alloys ex brass and bronze	17	1	..
Die castings	133	107	106
Battery shells & parts, unassem	...	7	6
Chromite zinc sheets, mold, castings, pattern plates, forms n.e.s.	65	8	60

U. S. Zinc Imports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1957		
	Feb.	Mar.	Apr.
Zinc ore (content)	41,314	42,296	45,630
Canada	10,810	11,329	13,220
Mexico	17,178	15,302	13,735
Cuba	150	91	155
Guatemala	1,063	801	626
Honduras	98	635	61
Bolivia	21	523	497
Chile	682	....	103
Peru	10,770	12,698	14,644
U. of S. Africa	....	466	2,347
Australia	535	422	231
Philippines	....	13	....
Other countries	7	16	11
Zinc blocks, pigs, etc.	24,287	22,761	30,036
Canada	12,287	8,292	7,712
Mexico	2,218	390	1,481
Peru	602	326	6,727
Austria	220	....	220
Belgium	3,226	3,238	2,244
Germany (W.)	331	277	2,269
Italy	414	1,489	1,490
Netherlands	608	....	....
U. Kingdom	..	....	1,120
Yugoslavia	1,157	1,433	2,756
Belg. Congo	1,003	4,134	1,215
Rhodesia	....	1,624	....
Australia	1,568	1,120	2,802
Japan	653	401	....
Other countries	....	37	....
Total Imports:			
Zinc ore, Block, pigs	65,601	65,057	75,666
Dross and skim	17	....	2
Old and worn out	3	35	....

Comparative Metal Prices

	Av. 1939	OPA Av. 1946	1957 July 19
Copper Domestic (Electro., Del. Valley)	11.20	14.375	28.25-29.25
Lead (N. Y.)	5.05	8.25	14.00
P. W. Zinc (E. St. Louis, f.o.b.)	5.05	5.05	10.00
New York, del.	...	...	10.50
Tin, Spot Straits, N. Y.	..	..	96.125
Aluminum Ingot 99%+	20.00	15.00	27.10
Antimony (R.M.M. brand, f. o. b. Laredo)	12.86	14.50	33.00

World Production of Copper

(American Bureau of Metal Statistics)

(In Tons of 2,000 Pounds)

	United States (a)	Canada (b)	Mexico (crude) (c)	Chile (d)	Peru (d)	Fed. Rep. of Germany (e)	Norway (f)	United Kingdom (g-h)	Yugo-slavia (c)	India (f-h)	Japan (e)	Turkey (f)	Australia (e)	Northern Rhodesia (e)	Union of South Africa (d)
1951															
Total	964,589	269,971	60,511	396,937	25,495	234,647	.....	.....	....	....	100,254	....	16,934	349,667	36,104
1952															
Total	961,886	258,868	60,874	422,498	22,640	206,747	11,206	163,968	36,176	7,009	104,060	2,548	21,119	336,883	37,459
1953															
Total	957,318	253,652	63,380	371,742	25,803	233,330	13,306	108,604	34,281	5,709	100,381	25,641	37,080	382,384	38,241
1954															
Total	863,721	302,984	59,030	372,814	29,233	258,259	14,205	152,858	33,394	8,274	117,371	27,727	42,241	386,577	43,153
1955															
Total	1,036,702	326,599	61,583	447,288	35,478	286,805	14,876	138,271	31,151	8,432	124,903	26,313	41,935	350,302	47,176
1956															
Mar.	102,459	31,659	7,107	38,356	2,500	23,838	1,322	12,281	2,313	821	10,390	3,074	5,991	32,535	3,778
Apr.	98,578	27,804	6,436	39,731	2,474	22,593	1,402	8,154	1,660	761	9,927	2,355	5,443	30,789	3,196
May	101,422	29,422	5,801	39,954	2,612	23,134	1,415	10,217	3,103	755	11,923	2,443	4,477	33,577	4,835
June	98,496	29,097	5,614	36,812	2,412	23,920	1,413	9,715	3,018	687	12,490	2,628	4,461	33,640	4,461
July	84,787	31,141	5,109	40,880	2,602	24,383	1,186	12,223	3,197	740	12,570	1,044	4,589	33,279	3,090
Aug.	91,282	28,719	5,357	44,202	2,523	24,006	1,251	6,733	3,323	782	12,443	1,584	4,841	33,720	4,715
Sept.	88,659	31,196	5,609	41,475	....	24,022	1,510	11,281	3,028	785	12,015	2,298	4,207	26,917	4,307
Oct.	95,109	29,977	6,488	47,346	....	24,405	1,733	11,127	3,020	757	12,477	2,754	4,497	42,381	4,868
Nov.	90,573	29,837	5,871	46,407	....	22,156	1,344	11,426	2,733	702	10,648	2,717	5,252	38,800	4,170
Dec.	92,231	30,422	5,521	44,911	838	21,989	1,293	9,174	2,687	786	11,993	2,064	4,707	38,892	4,299
1957															
Jan.	94,873	26,053	5,592	44,697	2,276	21,990	1,399	11,528	2,697	440	12,493	1,565	4,047	36,360	3,744
Feb.	92,508	29,020	4,630	41,890	2,185	20,736	953	11,178	2,586	768	12,599	1,455	4,188	35,251	3,392
Mar.	96,363	30,508	5,688	42,596	2,582	24,554	931	11,651	3,123	850	12,116	3,011	....	43,471	.....
Apr.	98,910	....	5,139	.....	2,498	23,405	....	7,853	....	810	..	....	....	37,605	.....
May	96,001	....	5,421	.....	2,575	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

(a) Reported by Copper Institute. Crude, "recoverable contents of mine production or smelter production or shipments, and custom intake". Does not include intake of scrap nor of imported ore except that received from Cuba and Philippines. (b) Blister copper plus recoverable copper in concentrates, matte, etc., exported. (c) Crude copper, i. e., copper content of blister or converter copper as originally produced in the several countries, although some of it may be refined at home; e. g., in Rhodesia. (d) Blister and/or refined. (e) Refined. There are quantities of scrap included in the electrolytic production in addition to that reported, tonnage of which is not obtainable. (f) Smelter production. (g) Refinery production from imported blister only. (h) British Bureau of Non-Ferrous Metal Statistics. *Refined.

World Production of Refined Lead

(American Bureau of Metal Statistics)

(In Tons of 2,000 Pounds)

	United States	Canada	Mexico	Peru	Belgium	France	Fed. Rep. of Germany	Italy	Spain	Yugo-slavia	Japan	Aus-tralia (a)	French Morocco	Tunisia	Rho-desia	Total
1951																
Total	486,874	162,712	219,362	45,324	77,873	53,331	170,766	39,683	45,460	.....	18,516	217,301	20,287	25,476	15,646	1,602,691
1952																
Total	532,778	183,389	248,551	53,536	83,139	59,607	152,751	38,504	46,060	74,053	20,882	217,293	31,224	28,264	14,112	1,783,643
1953																
Total	538,883	166,356	225,075	66,520	84,162	60,887	164,077	40,786	53,799	78,038	25,513	241,419	29,970	30,397	12,891	1,813,773
1954																
Total	551,613	166,379	231,595	63,735	79,260	71,033	162,773	41,150	62,475	73,555	37,612	260,424	29,417	30,015	16,800	1,877,841
1955																
Total	547,153	148,811	221,138	67,303	91,241	73,251	162,508	46,806	67,509	83,347	40,912	254,558	28,870	28,620	17,976	1,893,125
1956																
Mar.	54,174	12,438	17,376	6,142	9,338	6,823	14,562	3,164	5,319	7,187	4,009	19,535	3,505	2,500	1,680	167,740
Apr.	52,976	11,554	15,186	6,790	8,650	6,276	14,398	3,799	6,118	7,159	4,136	17,407	2,056	2,273	1,456	161 3x9
May	47,961	11,990	17,611	6,970	9,188	6,814	14,022	4,511	5,660	5,786	4,142	15,984	798	2,372	1,456	156,551
June	47,367	11,591	18,091	6,779	9,481	6,704	14,302	3,100	4,767	7,286	3,972	19,664	....	2,064	1,456	157,830
July	48,479	12,374	18,515	6,415	9,965	6,377	12,165	3.887	5,195	7,827	4,202	27,935	2,876	1,841	1,456	170,426
Aug.	48,404	12,196	18,890	6,192	9,872	1,896	11,586	2,440	4,724	7,546	4,126	19,757	4,151	1,933	1,400	155,665
Sept.	53,530	12,706	18,567	6,378	9,213	6,071	13,671	2.833	5.962	6,182	4,614	23,654	3,630	2,970	1,344	172,788
Oct.	54,815	13,923	20,169	2,237	9,243	7,212	16,873	4,600	6,002	8,237	4,271	26,243	2,490	2,389	1,400	181,423
Nov.	50,744	12,914	17,934		9,312	7,883	17,679	3,319	5,343	7,632	4,494	23,220	....	2,180	1,232	165,282
Dec.	54,062	12,531	17,088	5,787	9,540	1,797	17,094	3,667	5,113	7,747	4,885	22,263	1,948	2,724	1,344	169,392
1957																
Jan.	50,854	10,117	19,212	5.676	9,971	8,084	16,540	3,196	5,389	6,195	4,928	21,498	4,052	1,261	1,344	169,640
Feb.	48,012	11,192	18,574	5.736	9,969	7,970	14,516	3,519	3,980	6,213	4,863	17,060	3,759	2,544	1,232	159,948
Mar.	52,357	....	17,873	6,421	9,906	8,103	16,420	3,574	6,031	8,634	4,440	18,515	2,215	2,817	1,120	.....
Apr.	56,170	....	20,235	5,915	..	7,624	17,559	3,408	6,235	....	3,160	..	2,047	1,733	1,400	.....
May	51,718	....	13,942	5,355	..	..	..	..	..	....	....	....	....	....	1,400	.....

(a) Production credited to Australia includes lead refined in England from Australian base bullion.

World Production of Slab Zinc

(American Bureau of Metal Statistics)

(In Tons of 2,000 Pounds)

	United States (a)	Can. (b)	Mexico	Peru (b-c)	Belgium	France (a)	Fed. Rep. of Germany	Great Britain	Italy	Nether-lands	Norway (b)	Spain	Yugo-slovia	Japan (a)	Aus-tralia (b)	Rho-desia (b)	Total (d)
1951																	
Total	931,833	218,548	57,990	1,003	220,479	82,184	155,024	78,101	52,053	24,924	44,971	28,444	....	62,109	88,103	25,301	2,065,216
1952																	
Total	961,430	223,140	61,456	5,491	205,909	88,255	162,272	76,931	60,438	28,555	43,061	23,329	15,943	77,203	97,931	25,687	2,141,089
1953																	
Total	971,191	247,707	59,589	9,819	213,215	89,218	163,430	81,436	65,730	27,721	42,566	24,152	16,037	86,833	101,003	28,370	2,228,017
1954																	
Total	868,242	218,810	60,477	16,982	234,896	122,243	184,306	90,987	74,356	28,686	48,768	25,109	15,040	112,292	117,066	29,736	2,243,501
1955																	
Total	1,031,018	257,008	61,879	18,943	233,623	123,623	197,024	90,917	77,761	31,203	49,724	26,244	15,175	122,965	113,221	31,248	2,534,457
1956																	
Mar.	91,690	22,010	5,333	1,980	20,710	9,491	16,839	9,351	6,355	2,853	4,331	2,166	1,236	11,702	9,572	2,688	224,327
Apr.	88,664	21,339	5,207	1,220	20,687	10,819	16,689	7,382	6,613	2,693	4,002	2,172	1,222	13,806	9,243	2,688	218,3o8
May	81,238	21,790	5,248	1,225	21,300	11,174	17,212	6,719	7,190	2,662	4,168	2,226	1,289	13,401	10,012	2,688	214,194
June	78,321	20,780	5,142	1,439	21,030	11,003	16,898	8,857	6,270	2,530	4,427	2,175	1,282	12,466	8,606	2,632	208,635
July	83,080	21,691	5,198	1,285	21,015	10,679	17,964	6,617	6,433	2,637	4,688	2,047	1,325	13,089	11,141	2,800	216,200
Aug.	89,549	21,354	5,154	1,427	20,996	10,846	17,633	6,925	6,995	2,543	4,826	1,915	1,420	12,385	10,032	2,464	221,801
Sept.	90,235	20,691	5,018	....	21,207	10,210	17,187	9,130	6,817	2,452	4,487	1,918	1,287	12,674	9,866	2,744	220,868
Oct.	93,493	21,412	5,257	....	21,153	8,871	17,428	6,773	7,334	2,718	4,743	2,110	1,244	13,497	10,171	2,800	224,159
Nov.	91,808	20,470	5,060	....	21,044	9,257	16,851	6,443	7,037	2,727	4,538	2,087	1,414	12,717	9,810	2,716	219,916
Dec.	92,234	22,012	5,291	880	21,816	10,088	17,835	8,135	7,249	2,745	4,654	2,151	1,425	11,819	10,257	2,856	233,020
1957																	
Jan.	93,452	20,340	5,357	1,560	22,466	11,464	17,700	6,360	6,944	2,922	4,424	1,896	2,734	11,361	10,166	2,856	228,017
Feb	88,078	19,808	4,788	2,346	22,354	10,571	15,903	6,256	6.186	2.552	3,851	1,694	2,447	10.632	9,130	2.520	.....
Mar.	96,924	21,942	5.334	2 352	22,486	12,249	17,627	8,537	6,710	2,820	4,478	2,124	2,526	9,759	10,114	2,352	.....
Apr.	96,506	20,504	5,129	2 380	....	12,112	16,903	6,802	7,174	2,647	4,252	2,009	....	9,545	....	2,744	.....
May	96,855	20,565	5,219	2 650	....	..	..	7,345	....	....	4,464	..	....	....	..	2,800	.....

(a) Partially electrolytic. (b) Entirely electrolytic. (c) Beginning 1954 both electrolytic and electrothemic. (d) The above totals omits production in Russia, Czechoslovakia, Poland and in Argentina.

U. K. Virgin Copper Stocks

(In long tons)

British Bureau of Non-Ferrous Metal Statistics

At start of:	1955	1956	1957
Jan.	61,480	76,197	59,614
Feb.	62,771	79,377	59,203
Mar.	70,185	71,634	62,120
Apr.	67,566	73,776	61,779
May	60,767	76,481	71,101
June	58,546	71,713	61,991
July	64,256	76,188	....
Aug.	99,628	68,197	....
Sept.	107,261	72,069	....
Oct.	93,681	62,327	....
Nov.	75,533	58,893	....
Dec.	77,749	55,838	....

U. K. Refined Lead Stocks

(British Bureau of Non-Ferrous Metal Statistics)

(In long tons)

At start of:	1955	1956	1957
Jan.	31,173	40,987	39,420
Feb.	32,274	34,326	41,433
Mar.	39,461	29,693	36,900
Apr.	37,587	33,974	34,877
May	45,226	29,479	44,933
June	38,760	30,537	40,804
July	30,816	37,088	....
Aug.	32,270	35,432	....
Sept.	48,036	35,793	....
Oct.	42,912	39,391	....
Nov.	42,061	32,662	....
Dec.	38,410	32,025	....

U. K. Stocks of Zinc

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	Virgin Zinc		Zinc. Conc.	
At start of:	1956	1957	1956	1957
Jan.	49,962	44,816	54,447	53,274
Feb.	45,239	40,501	49,537	63,366
Mar.	44,288	38,927	48,667	59,957
Apr.	49,194	41,260	40,502	55,698
May	49,129	37,540	36,524	52,871
June	47,266	36,000	40,136	49,646
July	47,644	....	40,763	....
Aug.	49,169	....	47,972	....
Sept.	51,946	....	57,125	....
Oct.	50,978	....	55,354	....
Nov.	47,364	....	54,376	....
Dec.	46,364	....	55,223	....

U. K. Copper Exports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	1957		
	Mar.	Apr.	May
(Gross Weight)			
Copper, unwrought, ingots, blocks, slabs, bars, etc.	4,766	3,512	3,161
Plates, sheets, rods, etc.	3,488	2,447	2,907
Wire (including uninsulated electric wire)	6,011	4,920	3,545
Tubes	1,081	930	1,173
Other copper worked (incl. pipe fittings)	108	89	104
Total	15,454	11,898	10,890

Copper Consumption in United Kingdom

British Bureau of Non-Ferrous Metal Statistics

(In tons of 2,240 pounds)

	Unalloyed	Alloyed*	Total	Virgin	Scrap
1953 Total	243,717	192,337	447,260	322,311	124,949
1954 Total	328,149	251,989	580,138	448,413	131,725
1955 Total	377,576	281,953	659,529	496,467	163,062
1956					
February	33,213	24,163	57,376	40,934	16,442
March	32,903	24,366	57,269	43,913	13,356
April	27,489	21,029	48,518	36,418	12,100
May	29,845	22,295	52,140	41,747	10,393
June	33,774	21,810	55,584	43,622	11,962
July	31,752	19,316	51,086	39,149	11,919
August	24,426	14,434	38,860	30,065	8,795
September	35,203	19,584	54,787	45,807	8,980
October	36,824	21,275	58,099	47,814	10,285
November	38,244	21,142	59,386	47,144	12,242
December	29,927	17,437	47,364	38,505	8,859
Total	388,167	251,312	639,479	500,794	138,685
1957					
January	40,014	21,574	61,588	51,118	10,470
February	36,191	19,849	56,040	43,326	12,714
March	33,537	19,895	53,432	42,787	10,645
April	33,744	18,124	51,868	40,940	10,928
May	36,721	21,395	58,116	44,740	13,376

*Includes copper sulphate effective October, 1954.

U. K. Zinc Imports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	1957		
	Mar.	Apr.	May
(Gross Weight)			
Zinc ore and concentrates	7,636	8,203	7,586
Zinc. conc.	4,269	2,241	...
Australia	3,975	4,241	...
Turkey	294	...	...
Zinc and zinc alloys	13,876	13,955	14,287
N. Rhodesia	250	200	250
Australia	1,100	750	1,250
Canada	6,048	6,016	6,708
Belgium	1,942	1,747	1,668
Germany (W.)	351	58	501
Netherlands	163	25	325
Norway	250	...	...
United States	...	306	875
Other countries	3,772	4,853	2,710
Of which:			
Zinc or spelter, unwrought in ingots, blocks, bars, slabs and cakes	13,877	13,955	14,287

Zinc Imports and Exports By Principal Countries

(A. B. M. S.)

Reported in pigs, bars, etc.; metric tons except where otherwise noted.

	1957		
IMPORTS	Feb.	Mar.	Apr.
U. S. (s.t.)	24,287	22,761	30,036
Canada (s.t.)	2	...	...
Denmark	914	160	484
France	579	1,071	1,392
Italy	231	...	...
Netherlands	422	822	568
Sweden	1,078	1,620	...
Switzerland†	979	1,784	2,380
U. K. (l.t.)	10,948	13,876	13,955
India* (l.t.)	4,443	...	...
EXPORTS			
U. S. (s.t.)	503	987	1,200
Canada (s.t.)	16,618	14,923	17,131
Denmark	25	25	...
France	2	51	...
Italy	1,179	...	...
Netherlands	554	872	832
Norway	5,617	2,645	...
Switzerland†	797	255	488
U. K.‡ (l.t.)	262	289	343
Northern Rhodesia* (l.t.)	2,834	2,640	2,495
Australia* (l.t.)	6,942	...	...

† Includes scrap.

‡ Includes manufactures.

* British Bureau of Non-Ferrous Metal Statistics.

United Kingdom Tin Statistics

(British Bureau of Non-Ferrous Metal Statistics)

	Tin Content of Tin in Ore			Tin Metal				
	Imports	Production*	Stock at end of period*	Imports	Production*	Consumption	Exports & Re-exports	Stock at end of period
1955 Total	27,084	1,034	2,181	1,227	27,241	22,390	8,924	2,999
1956								
April	2,045	76	2,341	155	1,924	1,692	475	3,633
May	1,650	81	1,861	39	2,455	2,301	1,013	3,488
June	1,647	74	1,240	69	2,660	1,803	457	3,424
July	3,100	111	2,240	173	2,082	1,854	405	3,460
August	2,691	48	2,713	20	1,931	1,577	533	3,784
September	934	83	1,277	247	2,575	1,903	1,153	3,274
October	3,396	101	2,561	73	2,272	2,223	953	2,737
November	2,034	88	2,308	445	2,293	1,997	511	3,436
December	2,305	91	2,393	131	2,118	1,649	686	3,175
1956 Total	26,571	1,044	2,393	2,226	26,434	22,232	8,371	3,175
1957								
January	3,584	105	3,359	25	2,519	2,134	863	2,878
February	2,468	80	2,812	25	2,688	1,936	800	3,169
March	4,342	85	4,689	66	2,835	1,878	863	3,450
April	2,192	87	....	379	2,074	1,752	576	3,281

*As reported by International Tin Study Group. Production of Tin Metal includes production from imported scrap and residues refined on toll. Stocks exclude strategic stock but include official warehouse stocks.

Canada's Copper Output

(Dominion Bureau of Statistics)

(Refined Copper)
(In Tons)

	1954	1955	1956	1957
Jan.	15,001	22,600	26,653	25,469
Feb.	13,954	21,455	26,229	21,861
Mar.	21,075	25,083	26,750	27,664
Apr.	20,412	24,077	26,617	27,398
May	23,012	23,840	27,626	....
June	23,344	21,890	27,122	....
July	21,582	21,185	27,250	....
Aug.	22,000	26,184	29,219	....
Sept.	22,684	24,752	27,950	....
Oct.	21,661	25,546	29,696	....
Nov.	22,981	25,213	27,346	....
Dec.	24,935	27,172	28,716	....
Year	252,643	288,987	331,174	....

Canada's Lead Exports

(Dominion Bureau of Statistics)

(In Pigs)
(In Tons)

	1954	1955	1956	1957
Jan.	6,170	5,500	4,888	8,946
Feb.	7,560	11,882	3,856	6,633
Mar.	11,092	10,318	4,007	7,044
Apr.	9,606	11,967	7,636	7,314
May	11,483	6,416	7,214	....
June	12,018	9,897	6,632	....
July	13,152	8,341	9,696	....
Aug.	8,646	4,884	4,713	....
Sept.	10,045	5,538	9,908	....
Oct.	8,005	8,053	9,072	....
Nov.	10,817	4,622	9,227	....
Dec.	7,815	5,286	2,734	....
Year	116,406	92,407	79,633	....

Canada's Silver Exports

(Dominion Bureau of Statistics)

(In ores and concentrates)
(Fine Ounces)

	1955	1956	1957
Jan.	429,704	435,047	1,070,285
Feb.	457,261	196,803	1,039,491
Mar.	411,597	328,857	1,192,826
Apr.	493,578	348,838	1,247,029
May	445,054	447,710	.....
June	592,238	495,742	.....
July	285,350	686,209	.....
Aug.	644,932	1,080,301	.....
Sept.	636,992	481,042	.....
Oct.	684,301	731,099	.....
Nov.	387,147	669,285	.....
Dec.	405,719	1,023,481	.....
Year	5,873,873	6,924,414	.....

Canada's Copper Exports

(Ingots, bars, slabs and billets)
(In Tons)

	1954	1955	1956	1957
Jan.	9,081	11,078	15,981	20,582
Feb.	8,385	12,897	11,041	16,272
Mar.	11,671	12,423	12,276	14,720
Apr.	11,218	10,321	14,476	16,417
May	18,407	10,911	12,851	....
June	14,877	13,387	10,985	....
July	15,467	12,674	13,599	....
Aug.	14,158	13,219	14,710	....
Sept.	14,069	13,479	17,268	....
Oct.	11,528	14,208	13,896	....
Nov.	13,372	14,545	19,130	....
Dec.	13,897	14,057	18,630	....
Year	156,130	153,199	174,843	....

Canada's Zinc Output

(Dominion Bureau of Statistics)

(Refined Zinc)
(In Tons)

	1954	1955	1956	1957
Jan.	17,155	22,028	21,696	20,340
Feb.	15,199	19,865	20,356	19,808
Mar.	16,550	22,215	22,010	21,941
Apr.	16,249	21,301	21,339	20,504
May	16,530	21,599	21,790	....
June	17,017	20,565	20,780	....
July	17,917	21,769	21,691	....
Aug.	18,755	22,029	21,354	....
Sept.	18,023	20,898	20,691	....
Oct.	18,871	22,206	21,412	....
Nov.	19,662	21,398	20,470	....
Dec.	21,922	21,135	22,012	....
Year	213,810	257,008	255,601	....

Canada's Silver Output

(Dominion Bureau of Statistics)

(In Ounces)

	1955	1956	1957
Jan.	2,182,386	2,280,575	2,142,746
Feb.	1,960,506	2,094,467	2,004,525
Mar.	2,413,591	2,296,648	2,307,709
Apr.	2,304,287	1,759,384	2,190,294
May	2,235,620	2,463,374	.....
June	2,461,675	2,494,748	.....
July	2,385,654	2,267,271	.....
Aug.	2,480,607	2,315,312	.....
Sept.	2,386,385	2,517,451	.....
Oct.	2,371,890	2,379,162	.....
Nov.	2,088,991	2,429,547	.....
Dec.	2,388,627	2,357,202	.....
Year	27,696,319	27,655,141	.....

Canada's Lead Output

(Dominion Bureau of Statistics)

(Recoverable Lead)*
(In Tons)

	1954	1955	1956	1957
Jan.	17,716	18,959	16,002	14,032
Feb.	16,863	15,018	14,344	15,170
Mar.	17,104	19,113	16,857	16,940
Apr.	19,452	17,889	11,573	14,275
May	19,953	16,808	15,446	....
June	18,988	17,800	18,145	....
July	19,164	16,650	15,841	....
Aug.	18,237	16,676	16,104	....
Sept.	17,066	15,972	15,760	....
Oct.	16,569	13,658	16,725	....
Nov.	18,365	15,182	14,865	....
Dec.	19,093	17,857	16,056	....
Year	219,280	201,583	188,971	....

* New base bullion from Canadian ores plus recoverable lead in ores or concentrates shipped for export.

Canada's Zinc Exports

(Dominion Bureau of Statistics)

(Slabs in Tons)

	1954	1955	1956	1957
Jan.	16,625	22,181	15,550	19,304
Feb.	11,328	25,556	11,757	16,618
Mar.	18,199	20,178	8,822	14,923
Apr.	17,926	21,018	14,317	17,131
May	13,926	14,820	11,357	....
June	15,654	19,581	15,296	....
July	27,582	13,522	15,499	....
Aug.	14,934	16,581	13,070	....
Sept.	17,298	11,793	19,732	....
Oct.	13,064	19,836	20,792	....
Nov.	16,224	14,164	21,411	....
Dec.	23,277	14,607	16,125	....
Year	206,037	213,837	183,728	....

Canada's Nickel Output

(Dominion Bureau of Statistics)

(In Tons)

	1954	1955	1956	1957
Jan.	12,765	14,387	14,985	16,609
Feb.	11,874	13,375	14,997	15,027
Mar.	13,619	15,544	15,504	16,733
Apr.	13,015	15,011	14,431	15,347
May	13,458	15,352	15,203	....
June	13,269	14,835	14,492	....
July	12,901	14,530	15,125	....
Aug.	13,428	14,825	14,852	....
Sept.	13,521	13,734	14,530	....
Oct.	14,323	14,411	15,762	....
Nov.	14,159	14,290	15,062	....
Dec.	14,947	14,881	14,824	....
Year	161,279	175,173	178,767	....

Canadian Copper Exports

(Dominion Bureau of Statistics)

(In tons of 2,000 Lbs.)

	1957		
	Feb.	Mar.	Apr.
Ore, matte, regulus, etc. (content)	2,738	3,997	4,677
United States	2,296	2,254	2,865
Norway	331	1,710	1,665
U. Kingdom	111	33	147
Ingots, bars, billets, anodes	16,272	14,720	16,417
United States	8,142	7,496	7,353
Brazil	...	88	...
France	354	656	504
Switzerland	...	56	281
U. Kingdom	6,980	6,002	7,936
India	196	196	...
Other countries	...	2	6
Sweden	...	224	225
Italy	...	...	112
Total Exports:			
Crude & refined	19,010	18,717	21,094
Old and scrap	940	995	636
Rods, strips, sheet & tubing	441	1,330	571

Canadian Zinc Exports

(Dominion Bureau of Statistics)

(In tons of 2,000 Lbs.)

	1957		
	Feb.	Mar.	Apr.
Ore (zinc content)	10,661	10,555	12,750
United States	10,661	10,555	12,750
Slab zinc	16,618	14,923	17,131
United States	12,670	8,400	9,021
Argentina	91	...	...
Italy	112	...	...
U. Kingdom	3,613	6,168	7,764
Korea	99	276	80
Philippines	...	...	243
Taiwan	...	23	23
Other countries	33	...	...
Netherlands	...	56	...
Total Exports:			
Ore and slabs	27,279	25,478	29,881
Zinc scrap, dross, ashes	483	35	179
United States	95	35	...
Belgium	135	...	...
Germany (W.)	90	...	...
Netherlands	130	...	27
Japan	33	...	152

Canadian Lead Exports

(Dominion Bureau of Statistics)

(In tons of 2,000 Lbs.)

	1957		
	Feb.	Mar.	Apr.
Ore (lead content)	1,773	2,220	1,559
United States	1,773	2,220	1,559
Refined lead	6,632	7,044	7,314
United States	3,778	2,690	3,509
Brazil	108	...	56
U. Kingdom	2,352	2,128	2,968
Japan	358	2,051	777
Taiwan	36	62	...
Other countries	...	1	4
Germany (W.)	...	112	...
Total Exports:			
Ore and refined	8,405	9,264	8,873
Pipe and tubing	1	1	...
Lead scrap	...	1	...

Copper Imports and Exports By Principal Countries

(A. B. M. S.)

Reported in ingots, slabs, etc.; metric tons except where otherwise noted.

	1957		
	Feb.	Mar.	Apr.
IMPORTS			
U. S. (blist., s.t.)	18,217	29,081	32,558
(ore, etc., s.t.)	10,131	9,737	13,265
(ref., s.t.)	14,190	16,155	11,815
Denmark	422	150	433
France (crude)	1	...	813
(refined)	15,498	13,907	17,352
Italy	10,043	...	...
Netherlands	1,410	2,188	1,934
Norway	805	527	...
Sweden	3,136	3,255	...
Switzerland	3,843	3,189	5,841
U. K. (l.t.)	34,635	39,177	39,944
India (blister-ref., l.t.)*	3,163	...	...
Australia (blister & ref., l.t.)*	500	1,000	...
EXPORTS			
U. S. (ore and unref., s.t.)	1,407	1,972	1,340
(ref., s.t.)	29,769	41,376	32,315
Canada (ref., s.t.)	16,272	14,720	16,417
Finland†	103	271	50
Norway	894	1,045	...
Sweden	430	336	...
U. K. (l.t.)	3,716	4,766	3,512
No. Rhodesia (ref. & blist., l.t.)*	46,031	32,460	27,555

† Includes old.
* British Bureau of Non-Ferrous Metal Statistics.

U. K. Copper Imports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	1957		
	Mar.	Apr.	May
(Gross Weight)			
Copper and copper alloys	39,177	39,944	34,528
U. of S. Africa	200	81	...
N. Rhodesia	18,418	18,204	14,897
Canada	6,109	6,751	6,085
Belgium	...	1	...
Germany (W.)	38	11	10
Norway	151	125	1
United States	6,348	8,197	6,656
Chile	7,600	5,550	5,950
Peru	...	235	400
Turkey	...	492	...
Belg. Congo	296	250	500
Other countries	17	47	29
Of which:			
Electrolytic	22,145	25,897	23,910
Other refined	7,500	3,775	2,000
Blister or rough	9,433	10,213	8,577
Wrought and alloys	99	59	41
Total	39,177	39,944	34,528

Canada's Nickel Exports

(Dominion Bureau of Statistics)

(Refined, in oxides, matte, etc.)
(In Tons)

	1955	1956	1957
January	14,421	15,121	14,260
February	13,915	13,940	9,974
March	13,564	16,219	14,958
April	16,083	14,448	18,671
May	14,761	14,729	.....
June	16,296	16,403	.....
July	13,929	11,079	.....
August	14,861	18,470	.....
September	14,638	13,849	.....
October	13,589	12,800	.....
November	13,073	14,084	.....
December	14,749	15,694	.....
Year	173,879	176,837	.....

French Copper Imports

(A.B.M.S.)

(In metric tons)

	1957		
	Mar.	Apr.	May
Crude copper for refining (blister, black and cement)	...	813	1,313
Belg. Congo	...	813	813
Turkey	...	...	500
Refined	13,907	17,352	14,636
United States	2,236	5,883	3,993
Canada	1,136	457	1,321
Chile	...	314	...
Belgium	3,955	4,912	4,701
Germany (W.)	724	511	215
Norway	102	254	...
Sweden	102	...	...
U. Kingdom	701	539	919
Belg. Congo	3,768	2,536	1,945
Rhodesia-Nyasaland	1,183	1,795	1,542
Other countries	...	151	...

French Zinc Imports

(A.B.M.S.)

(In metric tons)

	1957		
	Mar.	Apr.	May
Ore (gross weight)	24,916	26,352	23,123
Peru	3,969	6,127	250
Greece	3,407	2,176	...
Italy	...	583	3,328
Norway	961	...	456
Portugal	...	...	269
Spain	3,489	...	1,619
Sweden	...	...	260
Yugoslavia	2,050	...	800
Algeria	344	3,541	3,021
Morocco	9,009	8,494	7,607
Tunisia	...	1,645	818
Australia	1,687	3,786	4,695
Slabs, bars, blocks, etc.	1,071	1,392	1,177
Belgium	996	975	940
Germany (W.)	...	275	...
Italy	50	66	137
Norway	25	50	100
Russia	...	26	...

French Metal Exports

(A.B.M.S.)

(In metric tons)

	1957		
	Mar.	Apr.	May
LEAD			
Ore (gross weight)	736	294	38
Pig lead	518	272	26
Switzerland	515	255	...
Other countries	3	17	26
Antimonial lead	33	33	11
ZINC			
Slabs, bars, blocks, etc.	51	...	...

IT PAYS
to
ADVERTISE
in the
DAILY METAL REPORTER

Nonferrous Castings

MONTHLY SHIPMENTS, BY TYPE OF METAL
(Bureau of Census — Thousands of Pounds)

	Aluminum	Copper	Magnesium	Zinc	Lead Die
1951 Total	515,131	1,197,443	30,825	487,996	25,936
1952 Total	518,979	1,009,910	34,857	408,353	20,941
1953 Total	658,022	990,496	34,517	521,253	20,444
1954 Total	607,764	834,557	25,572	474,741	18,396
1955					
December	75,275	88,287	2,255	70,950	1,817
Total	833,058	1,011,748	27,892	781,254	21,045
1956					
January	74,152	89,767	2,959	68,050	1,598
February	73,096	91,706	2,977	66,584	1,636
March	73,785	96,085	3,046	65,760	1,644
April	67,880	90,679	3,140	58,274	1,910
May	65,786	89,188	3,021	52,205	1,919
June	58,189	78,921	2,949	47,775	1,883
July	52,955	60,926	2,810	42,227	1,551
August	61,507	77,619	3,059	52,321	2,112
September	62,503	72,109	3,079	46,340	1,004
October	74,209	81,049	3,442	65,450	2,206
November	69,741	72,866	2,892	64,972	1,788
December	67,333	65,198	2,794	58,111	1,483
Total	801,136	966,473	36,168	88,069	20,734
1957					
January	72,999	82,025	3,207	67,964	1,883
February	69,651	72,084	2,661	59,793	1,435
March	74,527	77,418	2,970	61,378	1,865
April	68,284	77,167	2,896	54,982	2,070

Copper Castings Shipments

BY TYPE OF CASTING
(Bureau of Census) (Thousands of Pounds)

	Total	Sand	Permanent Mold	Die	All Other
1951 Total	1,197,443	1,075,437	69,883	12,516	39,607
1952 Total	1,009,910	910,862	63,865	8,259	26,924
1953 Total	990,496	888,369	61,316	10,077	30,734
1954 Total	834,557	751,804	48,849	6,480	27,394
1955					
November	90,345	80,934	5,807	743	2,861
December	88,287	78,327	6,368	713	2,879
Total	1,011,748	907,852	63,041	8,541	31,408
1956					
January	89,767	80,116	6,135	799	2,717
February	91,706	82,244	5,888	727	2,847
March	96,085	85,894	6,299	782	3,110
April	90,679	81,333	5,835	722	2,789
May	89,188	80,155	5,398	751	2,854
June	78,921	70,260	5,052	755	2,854
July	60,926	55,027	3,193	506	2,200
August	77,619	70,479	3,805	904	2,431
September	72,109	64,887	3,930	929	2,363
October	81,049	73,058	4,104	1,120	2,767
November	72,866	65,022	4,114	1,057	2,673
December	65,198	57,929	3,769	971	2,529
Total	966,113	866,404	57,522	10,023	32,134
1957					
January	82,025	73,702	4,510	1,008	2,805
February	72,084	64,346	4,188	874	2,676
March	77,418	69,258	4,445	878	2,837
April	77,167	69,141	4,316	894	2,816

Nickel Averages

Electro, cathode sheets, 99.00%, f.o.b. refinery, duty included
(Cents per pound)

	1954	1955	1956	1957
Jan.	60.00	64.50	64.50	74.00
Feb.	60.00	64.50	64.50	74.00
Mar.	60.00	64.50	64.50	74.00
Apr.	60.00	64.50	64.50	74.00
May	60.00	64.50	64.50	74.00
June	60.00	64.50	64.50	74.00
July	60.00	64.50	64.50	....
Aug.	60.00	64.50	64.50	....
Sept.	60.00	64.50	64.50	....
Oct.	60.00	64.50	64.50	....
Nov.	60.98	64.50	64.50	....
Dec.	64.50	64.50	72.48	....
Av.	60.46	64.50	65.165	....

Platinum Averages

N. Y. MONTHLY QUOTATIONS
(Dollars per Troy Ounce)

	1954	1955	1956	1957
Jan.	91.40	81.00	106.30	101.92
Feb.	91.00	78.16	104.34	98.59
Mar.	87.88	78.00	104.23	93.50
Apr.	85.50	77.94	103.92	93.45
May	85.50	77.50	105.23	92.865
June	85.50	78.33	106.50	92.02
July	85.50	81.78	106.50	....
Aug.	85.00	84.59	105.76	....
Sept.	85.50	91.96	105.50	....
Oct.	83.62	94.60	104.85	....
Nov.	81.07	103.11	104.50	....
Dec.	80.64	106.58	104.50	....
Av.	85.72	86.12	105.18	....

Spot Straits Tin

(Straits, Open Market, N. Y.)
Monthly Average Prices

	1954	1955	1956	1957
Jan.	85.125	87.268	105.036	101.511
Feb.	85.16	90.836	100.803	101.132
Mar.	92.457	91.161	100.786	99.643
Apr.	96.298	91.48	99.268	99.304
May	93.51	91.41	96.994	98.347
June	94.24	93.68	94.589	98.05
July	96.55	97.08	96.143	....
Aug.	93.381	96.521	99.049	....
Sept.	93.536	96.607	103.809	....
Oct.	93.225	96.20	106.023	....
Nov.	91.176	97.987	110.921	....
Dec.	88.571	108.02	104.268	....
Aver.	91.935	94.85	101.474	....

Prompt Tin Prices

(Straits, Open Market, N. Y.)
Monthly Average Prices
(Cents per pound)

	1954	1955	1956	1957
Jan.	84.84	87.628	104.768	101.347
Feb.	85.04	90.75	100.586	100.257
Mar.	91.24	91.065	100.524	99.476
Apr.	96.238	91.41	99.145	99.286
May	93.51	91.38	96.853	98.335
June	94.24	93.64	94.488	98.025
July	96.55	96.825	96.131	....
Aug.	93.381	96.456	98.924	....
Sept.	93.536	96.256	103.559	....
Oct.	93.00	96.075	105.716	....
Nov.	91.099	97.882	110.329	....
Dec.	88.571	107.75	104.00	....
Av.	91.77	94.73	101.252	....

Quicksilver Averages

N. Y. Monthly Averages
Virgin, Dollars per 76-lb. Flask

	1954	1955	1956	1957
Jan.	189.60	324.68	277.88	256.00
Feb.	190.00	324.68	270.29	256.00
Mar.	201.63	322.61	261.40	256.00
Apr.	221.36	318.14	267.22	256.00
May	251.20	306.62	267.675	256.00
June	273.46	286.98	260.69	256.00
July	287.40	268.22	256.06	....
Aug.	290.71	255.18	256.00	....
Sept.	314.08	263.70	256.00	....
Oct.	329.50	279.02	255.92	....
Nov.	321.17	282.50	255.13	....
Dec.	319.96	282.27	256.00	....
Av.	265.84	292.90	261.71	....

Primary Aluminum Output, Shipments and Stocks

(U. S. Department of Interior)

	Stocks beginning of month short tons	Production short tons	—Sold or Used— Short tons	Value f. o. b. plant	Stocks end of month short tons
1956					
August	34,925	92,406	90,614	44,519,556	36,717
September	36,717	132,316	121,854	60,104,570	47,179
October	47,179	149,125	134,014	67,126,363	62,290
November	62,290	145,081	119,787	60,252,640	87,584
December	87,584	148,391	133,186	67,039,743	102,789
Total	.....	1,679,247	1,591,478	.....	.....
1957					
January	102,496	147,029	104,394	52,418,766	145,131
February	145,131	119,059	97,886	49,173,176	166,324
March	166,324	135,706	141,529	71,240,311	160,501
April	160,501	139,152	123,549	.....	160,501
May	176,104	144,789	.....	.....	.....

Aluminum Wrought Products

PRODUCERS' MONTHLY NET SHIPMENTS

(Bureau of Census — Thousands of Pounds)

	Total	Plate, Sheet, & Strip	Rolled Structural Shapes, Rod, Bar & Wire	Extruded Shapes Tube Blooms & Tubing	Powder, Flake, & Paste
1954 Total	2,088,439	1,165,090	357,229	518,070	46,255
1955					
September	244,135	134,240	32,973	67,407	2,926
October	248,806	138,328	30,554	71,456	2,926
November	245,526	137,109	31,656	67,798	2,658
December	242,993	138,592	31,802	64,159	1,837
Total	2,805,500	1,542,368	365,391	812,311	35,854
1956					
January	251,639	142,049	34,008	67,499	2,118
February	240,999	134,077	33,727	65,261	1,901
March	**232,767**	**128,432**	**30,972**	**63,482**	**1,947**
April	260,610	143,859	37,971	69,639	3,316
May	264,378	147,613	39,900	68,106	2,215
June	240,415	132,510	33,438	65,600	2,119
July	247,895	139,571	35,346	64,249	2,736
August	248,457	141,400	32,413	66,315	3,039
September	217,425	117,074	32,154	59,462	2,953
October	252,289	136,546	25,385	73,363	2,255
November	218,272	114,618	31,501	64,197	1,716
December	194,822	99,851	31,787	55,225	1,702
Total	2,870,101	1,577,601	398,602	782,398	28,017
1957					
January	234,805	126,008	35,911	64,227	1,970
February	206,397	109,786	30,330	58,296	1,927
March	229,786	120,077	34,365	66,400	2,190
April	238,212	126,755	34,805	68,284	2,572
May	249,019	130,047	35,680	74,370	2,670

Aluminum Castings Shipments

(Bureau of Census)

BY TYPE OF CASTING

(Thousands of Pounds)

	Total	Sand	Permanent Mold	Die	All Other
1951 Total	515,131	193,378	160,011	151,465	10,277
1952 Total	518,979	194,616	146,883	169,732	7,748
1953 Total	658,022	214,553	200,025	239,330	4,114
1954 Total	609,066	155,738	213,968	232,726	6,800
1955					
November	75,065	14,327	26,267	33,852	619
December	75,275	15,291	25,031	34,347	606
1955 Total	833,058	171,757	298,115	354,804	8,282
1956					
January	74,152	15,861	24,528	33,253	510
February	73,096	15,560	23,963	32,949	624
March	**73,785**	**16,597**	**22,816**	**33,965**	**407**
April	67,880	14,732	20,718	31,782	648
May	65,786	15,600	19,669	29,814	703
June	58,189	13,448	19,067	25,027	647
July	52,955	12,398	16,388	23,491	678
August	61,407	13,100	18,067	29,553	687
September	62,503	12,354	17,855	31,640	654
October	74,209	14,389	21,120	37,782	918
November	69,741	14,333	20,673	33,929	806
December	67,333	13,391	20,557	32,923	454
1956 Total	801,036	171,763	245,421	376,108	7,736
1957					
January	72,999	14,201	20,963	37,194	641
February	69,451	13,366	21,707	34,311	67
March	74,527	13,914	22,974	37,521	118
April	68,284	14,287	20,376	33,493	...

Virgin Aluminum

Virgin 99% Delivered Monthly Average Prices

(Cents per pound)

	1954	1955	1956	1957
Jan.	21.50	22.90	24.40	27.10
Feb.	21.50	23.20	24.40	27.10
Mar.	21.50	23.20	24.60	27.10
Apr.	21.50	23.20	25.90	27.10
May	21.50	23.20	25.90	27.10
June	21.50	23.20	25.90	27.10
July	21.50	23.20	25.90	....
Aug.	22.12	24.26	26.70	....
Sept.	22.20	24.40	27.10	....
Oct.	22.20	24.40	27.10	....
Nov.	22.20	24.40	27.10	....
Dec.	22.20	24.40	27.10	....
Av.	21.785	23.655	26.008	....

Magnesium Wrought Products Shipments

(Bureau of Census)

(Thousands of Pounds)

	1954	1955	1956	1957
Jan.	972	1,776	2,188	1,065
Feb.	1,136	1,648	1,901	1,261
Mar.	1,136	1,947	1,946	1,194
Apr.	892	1,756	2,279	2,511
May	1,129	1,836	2,462	....
June	1,312	1,686	2,302	....
July	1,032	1,437	2,002	....
Aug.	1,111	1,742	2,523	....
Sept.	1,183	2,159	1,988	....
Oct.	1,002	1,667	861	....
Nov.	1,243	1,954	2,141	....
Dec.	1,673	1,577	2,452	....
Total	13,743	21,186	24,975	....

Cadmium Averages

N. Y. Monthly Averages

Cents per lb. in ton lots

	1954	1955	1956	1957
Jan.	200.00	170.00	170.00	170.00
Feb.	170.00	170.00	170.00	170.00
Mar.	170.00	170.00	170.00	170.00
Apr.	170.00	170.00	170.00	170.00
May	170.00	170.00	170.00	170.00
June	170.00	170.00	170.00	170.00
July	170.00	170.00	170.00	.....
Aug.	170.00	170.00	170.00	.....
Sept.	170.00	170.00	170.00	.....
Oct.	170.00	170.00	170.00	.....
Nov.	170.00	170.00	170.00	.....
Dec.	170.00	170.00	170.00	.....
Av.	172.50	170.00	170.00	.....

Steel Ingot Production

(American Iron and Steel Institute)

Period	Estimated Production — All Companies OPEN HEARTH Net tons	OPEN HEARTH Per cent of capacity	BESSEMER Net tons	BESSEMER Per cent of capacity	ELECTRIC Net tons	ELECTRIC Per cent of capacity	TOTAL Net tons	TOTAL Per cent of capacity	Calculated weekly production, all companies (net tons)
1952 Total	82,846,439	87.2	3,523,677	65.5	6,797,923	82.6	93,168,039	85.8	1,782,097
1953 Total	100,473,823	97.9	3,855,705	83.2	7,280,191	71.1	111,609,719	94.9	2,140,578
1954 Total	**80,327,494**	**73.6**	**2,548,104**	**53.2**	**5,436,054**	**62.0**	**88,311,652**	**71.0**	**1,693,741**
1955 Total	105,842,886	95.6	3,319,088	69.3	8,335,592	77.2	117,000,566	93.0	2,243,969
1956									
March	9,795,263	102.7	310,060	76.3	819,465	85.7	10,924,788	100.2	2,466,092
April	9,437,945	102.2	306,388	77.9	779,452	84.2	10,523,785	99.7	2,455,097
May	9,370,167	98.2	297,990	73.3	822,219	86.0	10,490,376	96.2	2,368,031
June	**8,665,044**	**93.9**	**282,846**	**71.9**	**773,546**	**83.6**	**9,721,436**	**92.1**	**2,266,059**
July	**1,330,151**	**13.9**	.....	...	**292,012**	**30.5**	**1,622,163**	**14.9**	**367,005**
August	7,213,274	75.6	189,564	46.6	719,759	75.3	8,122,597	74.5	1,833,543
September	9,342,796	101.2	286,978	72.9	792,885	85.7	10,422,659	98.8	2,435,201
October	9,841,002	103.2	330,101	81.2	877,410	91.8	11,048,513	101.3	2,575,411
November	9,430,248	102.2	295,827	72.5	829,925	89.6	10,555,500	100.0	2,460,490
December	9,695,919	101.6	308,465	75.9	833,161	87.1	10,837,545	99.4	2,451,933
Total	102,840,585	91.6	3,227,997	67.4	9,147,567	81.2	115,216,149	89.8	2,203,828
1957									
January	9,829,691	99.0	294,839	77.1	884,232	86.5	11,008,762	97.1	2,485,048
February	8,898,671	99.2	277,682	80.4	810,853	87.8	9,987,206	97.6	2,496,801
March	9,442,164	95.1	275,156	71.0	871,754	85.2	10,589,074	93.4	2,390,310
April	8,820,328	91.8	231,731	62.6	762,721	77.1	9,814,780	89.5	2,287,828
May	8,842,707	89.1	201,864	52.8	747,752	73.1	9,792,323	86.4	2,210,457
June	8,496,000	88.4	211,000	57.0	687,000	69.4	9,394,000	85.6	2,190,000

Blast Furnace Output

(American Iron and Steel Institute)

	net tons Pig Iron	Ferro-manganese & Spiegel	Total	% Capacity
1947				
Ttl. Yr.	58,507,169	702,561	59,209,730	90.1
1948				
Ttl. Yr.	60,135,941	712,899	60,848,840	90.2
1949				
Ttl. Yr.	53,613,779	592,564	54,206,343	76.8
1950				
Ttl. Yr.	64,810,272	673,896	65,484,168	91.5
1951				
Ttl. Yr.	70,487,380	745,381	71,232,761	98.8
1952				
Ttl. Yr.	61,523,665	629,926	62,158,591	84.2
1953				
Total	74,987,721	855,038	75,842,759	95.5
1954				
Total	58,119,382	568,785	58,688,117	71.6
1955				
Feb.	**5,894,585**	**48,182**	**5,442,767**	**84.5**
Mar.	**6,406,902**	**57,049**	**6,463,951**	**90.6**
Apr.	**6,329,927**	**54,712**	**6,384,639**	**92.4**
May	**6,758,236**	**51,699**	**6,804,935**	**95.4**
June	**6,495,050**	**48,735**	**6,543,878**	**94.7**
July	**6,329,393**	**61,166**	**6,390,559**	**89.5**
Aug.	**6,529,580**	**71,902**	**6,601,482**	**92.5**
Sept.	**6,653,678**	**49,788**	**6,703,366**	**97.3**
Oct.	**6,905,280**	**59,993**	**6,965,273**	**97.4**
Nov.	**6,636,649**	**62,341**	**6,698,990**	**97.0**
Dec.	**6,887,667**	**65,849**	**6,953,516**	**97.7**
Total	**77,114,073**	**868,758**	**77,800,831**	**92.7**
1956				
Jan.	**6,935,945**	**63,619**	**7,049,564**	**97.1**
Feb.	**6,539,199**	**63,618**	**6,602,817**	**97.2**
Mar.	**7,083,877**	**65,566**	**7,149,443**	**98.5**
Apr.	**6,960,533**	**63,760**	**6,924,663**	**98.6**
May	**6,878,102**	**47,840**	**6,920,942**	**95.3**
June	**6,387,608**	**46,981**	**6,434,589**	**91.6**
July	**1,089,518**	**17,491**	**1,107,009**	**15.2**
Aug.	**5,100,669**	**41,548**	**5,142,217**	**70.8**
Sept.	**6,873,064**	**59,584**	**6,932,648**	**98.7**
Oct.	7,245,650	69,909	7,315,559	100.8
Nov.	6,977,457	58,614	7,036,091	100.1
Dec.	7,268,743	65,841	7,334,584	101.0
Total	75,301,134	664,341	75,965,475	88.9
1957				
Jan.	7,209,547	72,826	7,282,373	98.8
Feb.	6,586,133	61,973	6,658,106	100.0
Mar.	7,179,100	67,779	7,246,879	98.3
Apr.	6,810,102	60,784	6,870,886	96.3
May	6,879,881	65,566	6,945,447	94.2

Steel Castings Shipments

(Bureau of Census)

	(Short Tons) Total	For Sale	For Own Use
1950	1,461,667	929,192	374,217
1951	2,101,604	1,507,413	594,191
1952	1,925,116	1,476,352	448,767
1953	1,829,277	1,290,016	431,330
1954			
Total	1,184,096	880,158	303,938
1955			
Feb.	**106,430**	**80,729**	**25,701**
Mar.	**127,460**	**98,926**	**28,534**
Apr.	120,053	92,237	27,816
May	122,465	92,713	29,752
June	133,887	102,457	31,430
July	97,875	71,170	26,705
Aug.	126,406	96,290	30,116
Sept.	140,843	107,622	33,221
Oct.	145,674	110,409	35,265
Nov.	152,381	116,908	35,473
Dec.	158,982	122,201	36,781
Total	1,530,694	1,166,706	363,988
1956			
Jan.	158,618	123,343	35,275
Feb.	165,398	128,598	36,800
Mar.	170,045	130,839	39,206
Apr.	163,708	125,015	38,693
May	178,227	142,025	36,202
June	164,661	129,147	35,514
July	117,984	96,350	21,634
Aug.	159,831	127,001	32,830
Sept.	155,046	121,705	33,341
Oct.	175,630	135,798	39,832
Nov.	164,114	126,900	37,214
Dec.	158,725	125,569	33,156
Total	1,931,987	1,512,290	416,697
1957			
Jan.	169,240	133,826	35,414
Feb.	154,932	121,667	33,265
Mar.	160,054	124,416	35,638
Apr.	162,498	124,549	37,949

Galvanized Sheet Shipments

(American Iron & Steel Institute)
(Net Tons)

	1954	1955	1956	1957
Jan.	169,086	211,101	269,464	235,902
Feb.	167,433	199,408	272,997	205,048
Mar.	180,198	238,649	291,193	206,836
Apr.	203,312	239,001	266,728	198,585
May	201,671	235,962	272,741	206,657
June	200,456	246,940	279,058	
July	214,349	205,211	*	
Aug.	207,113	241,863	276,048	
Sept.	209,765	269,020	256,803	
Oct.	209,498	260,010	278,637	
Nov.	195,190	255,692	255,135	
Dec.	205,561	261,640	239,173	
Tot.	2,362,632	2,864,497	2,957,991	

* Combined with August figures.

SHIPMENTS OF TIN-TERNEPLATE

(American Iron & Steel Institute)
(Net Tons)

	Hot Dipped 1956	Hot Dipped 1957	Electrolytic 1956	Electrolytic 1957
Jan.	81,034	88,174	402,627	492,502
Feb.	77,877	63,046	404,193	407,008
Mar.	133,257	113,593	598,129	618,827
Apr.	138,556	130,037	554,575	664,590
May	70,282	34,292	354,204	278,769
June	84,371		466,060	
July	*		*	
Aug.	81,005		408,903	
Sept.	72,400		396,588	
Oct.	92,394		415,451	
Nov.	70,510		325,408	
Dec.	68,385		288,896	
Tot.	950,070		4,615,068	

* Combined with August figures.

Steel Ingot Operations

(Percentage of Capacity as Reported by American Iron & Steel Institute)

Week Beginning	1954	1955	1956	1957
Jan. 7...	75.4	81.2	97.6	98.4
Jan. 14...	74.3	83.2	98.6	96.4
Jan. 21 ..	74.1	83.2	99.0	96.6
Jan. 28...	75.6	85.0	100.4	97.6
Feb. 4...	74.4	85.4	99.3	97.1
Feb. 11...	74.4	86.8	99.1	97.7
Feb. 18...	74.6	89.1	98.8	97.8
Feb. 25...	73.6	90.8	98.8	96.0
Mar. 4...	70.7	91.9	99.9	94.2
Mar. 11...	69.3	92.9	100.0	93.8
Mar. 18...	67.6	94.2	100.6	93.5
Mar. 25...	68.1	93.7	99.5	92.4
Apr. 1...	69.1	94.4	99.6	90.6
Apr. 8...	68.0	95.3	97.7	90.3
Apr. 15...	68.0	94.6	100.9	90.4
Apr. 22...	68.6	94.6	100.2	88.7
Apr. 29...	68.7	95.6	100.5	87.0
May 6...	69.4	96.6	96.4	86.7
May 13...	70.9	97.2	95.2	84.2
May 20...	71.8	96.9	95.3	86.4
May 27...	71.2	96.4	97.3	88.0
June 3...	70.2	95.8	96.3	87.5
June 10...	73.2	94.7	96.7	86.5
June 17...	72.3	96.0	93.4	85.2
June 24...	72.1	95.0	93.0	84.0
July 1...	65.8	71.1	84.9	78.5
July 8...	60.0	85.9	12.3	78.7
July 15...	64.3	91.2	12.9	81.0
July 22...	65.3	91.0	14.6	....
July 29...	64.2	90.7	17.0	....
Aug. 5 ..	64.0	86.9	16.9	....
Aug. 12...	64.0	89.4	57.5	....
Aug. 19...	61.8	90.2	87.5	....
Aug. 26...	63.5	90.6	95.8	....
Sept. 2...	64.0	93.4	97.0	....
Sept. 9...	63.0	93.8	98.7	....
Sept. 16...	66.3	95.7	100.6	....
Sept. 23...	68.7	96.1	100.6	....
Sept. 30...	70.4	97.0	101.6	....
Oct. 7...	71.0	96.7	101.8	....
Oct. 14...	72.8	96.5	100.9	....
Oct. 21...	73.6	98.9	101.4	....
Oct. 28...	74.5	100.0	101.2	....
Nov. 4...	76.4	99.4	101.3	....
Nov. 11...	77.2	99.6	100.6	....
Nov. 18...	79.3	99.2	100.2	....
Nov. 25...	80.3	100.1	100.1	....
Dec. 2...	81.4	97.6	101.1	....
Dec. 9...	82.5	100.1	101.3	....
Dec. 16...	81.5	100.3	102.0	....
Dec. 23 ..	72.4	96.9	94.3	....
Dec. 30...	77.6	95.7	97.3	....

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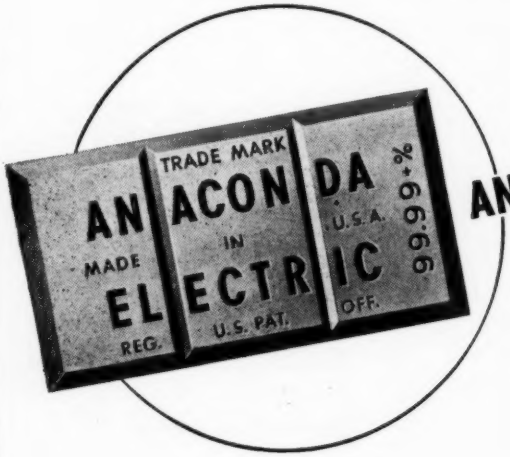

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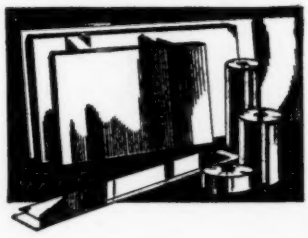

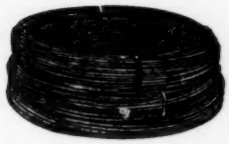

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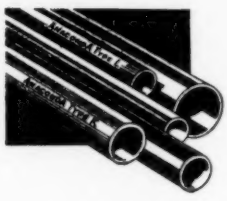

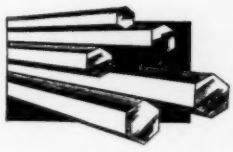

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Ansonia, Conn.
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Cambridge 42, Mass.
Cedar Rapids, Iowa
Charlotte 2, N. C.
*Chicago 39, Ill.
Cincinnati 2, Ohio
*Cleveland 14, Ohio
Columbus 15, Ohio
*Dallas 25, Texas
Denver 2, Colo.
Detroit 31, Mich.
Houston 2, Texas
Kenosha, Wis.
Los Angeles 17, Calif.
Miami 30, Fla.
*Milwaukee 4, Wis.
Minneapolis 2, Minn.
Newark 2, N. J.
New York 16, N. Y.
*Philadelphia 22, Pa.
Pittsburgh 19, Pa.
*Providence 3, R. I.
Rochester 4, N. Y.
St. Louis 3, Mo.
San Francisco 4, Calif.
Seattle 1, Wash.
Syracuse 2, N. Y.
Torrington, Conn.
Washington 5, D. C.
Waterbury 20, Conn.

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